Industrial Equipment News

IEN

FOUNDED 1933

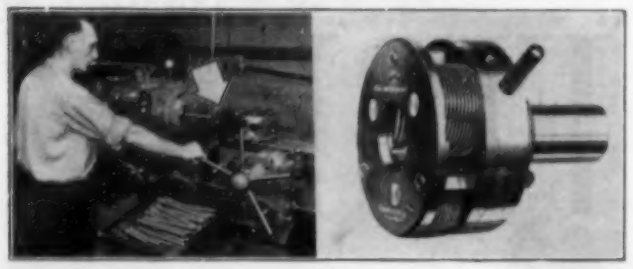
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 7319**

THREADING . . Roll type head in stationary and rotating designs

Source: NATIONAL ACME CO.
170 E. 131st St., Dept. IEN, Cleveland 8, Ohio



Details in Bulletin FHR-53

Hardened rolls, carrying annular thread grooves, are mounted on needle bearings carried by eccentric studs between two plates in this new patented Fette self-opening head. When forward travel of the head shank is stopped, the head continues to move to actuate a clutch and release spring-actuated gearing. This gearing rotates the eccentric studs to move the rolls out and away from the work. The head is then retracted and is rotated, by means of a reset handle, so the clutch re-engages and the springs are reset to lock in working position.

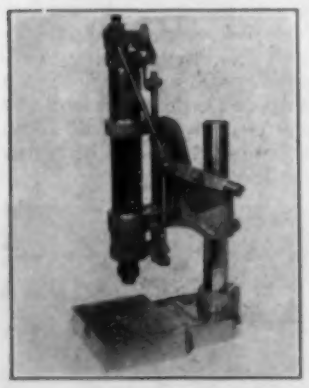
The trip and reset mechanism, on the revolving type head, is the same except that it is operated by an outside yoke. An internal or an external trip can be used on either design. The head is adjusted to exact diameter by rotating a ring that is locked to the head by three screws. This ring is graduated to assist in set-up.

The rolling action causes the metal in the work to flow in an axial direction with slight radial pressure so the thread is generated ahead of the rolls. This causes the metal to flow to the full depth of the thread and eliminates broken grain structure and cratering at the thread crest. The operation is carried on at speeds equivalent to turning speeds of the work material using high-speed tools. The rolling produces a smooth burnished surface. The head is available in stationary design in capacities from 1/16 to 1 in. and in revolving design from 7/16 to 1 inch. It can be employed horizontally or vertically.

If you write maker identify as **IEN - 7320**

PRESS . . Pneumatic impact unit to mark, rivet, stake, stamp, swage

Source: HEIDRICH-NOURSE COMPANY
631 E. 3rd St., Dept. IEN, Los Angeles 13, Calif.



List price is $375

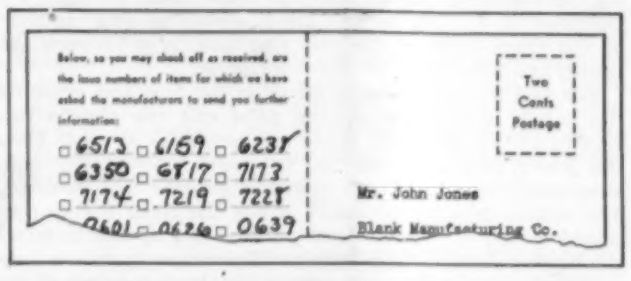
The power cylinder, in this new Model 2-CSB impact press, is mounted to slide vertically in a guide bracket mounted on a base supported column. It is held up by a spring. It is moved down by depressing a foot pedal until a tool held in its nose-end chuck contacts work positioned on the base, or in a base fixture. A little added pressure on the pedal, or on the hand lever, "triggers" a valve on the upper cylinder head to admit air pressure from a shop line to a surge chamber above the cylinder piston.

The air drives the hammer type piston downward to strike the anvil in which the tool chuck is mounted. Force of the impact is adjustable, to a maximum of about 7,000 lb., by regulating the volume of air admitted to the surge chamber. The piston hammer is returned to the top of its stroke by air pressure to hold in "up" position until another charge of air is admitted.

The new press is a small version of the original Model 3-VS which rates to 30,000 pounds. The power cylinder can be removed from the frame and employed as a portable single stroke hammer to mark heavy work in place.

If you write maker identify as **IEN - 7321**

YOUR INQUIRIES . . Watch for card that IEN mails to you for your records



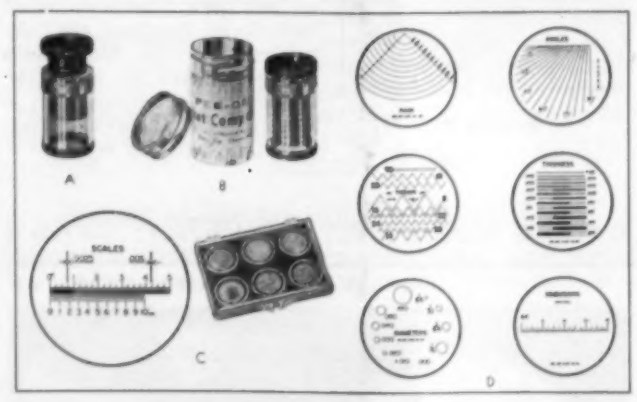
Immediately, upon receipt of a reader service form that you have mailed to IEN, a post card is filled in with the item numbers you have noted on the form. This card is addressed back to you so you will have a record to check against as the manufacturers send you the data you have requested.

We would like to know of cases where the service you receive is prompt and constructive. Particularly, however, we hope you will let us know if any of the requested information does not reach you within a reasonable time. We will follow up promptly to get the action you have asked for.

If you write maker identify as **IEN - 7322**

GAGE . . Optical comparator, 6X lens, for precision parts inspection

Source: NATIONAL TOOL CO.
11200 Madison Ave., Dept. IEN, Cleveland 12, Ohio



$14 with seven reticles

Pee Gee is a new miniature version of a similar instrument, previously described IEN-2007-50. It is supplied in a dust-tight plastic container with a screw top measuring about 1 by 2 in. overall. It lists at $9.75 with one of a number of reticles to measure "scales." Six additional reticles, to measure radii, angles, threads, thicknesses, diameters and dimensions, are packaged in a permanent plastic case and list at $4.25. The body is made of clear molded lucite 1/8 in. in thickness. The adjustable lens barrel and reticle retainer ring are of machined aluminum with a black anodized protective finish.

The instrument is focused by sliding the eye piece in or out of the body against the action of a retaining steel ball held beneath a stainless steel spring near the top of the body. Fine adjustment is by turning the eye piece so it threads in and out on the ball. Each reticle is a reduction of a large precise "master" layout. The scales unit, supplied with the instrument, will measure dimensions from 0.0025 to 0.5 in. in steps of 0.0025. It also will measure to 0.10 mm. in steps of 0.2 mm. by means of a metric scale.

Application can be made to inspect flaws such as bubbles, blow holes, cracks, die castings, plastic molded parts, glass parts, lenses, jewels. It will check radii, angles, chamfers, threads, small holes, linear, radial and tangent dimensions, odd shapes on machined, stamped or cast production parts. It will check the ground form on conventional tool bits, on circular and flat formed tools and on the size of small holes, line threads and wires. Wear can be determined on the cutting edges of tools. Patents are pending.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

JULY, 1954
VOL. 22 No. 7

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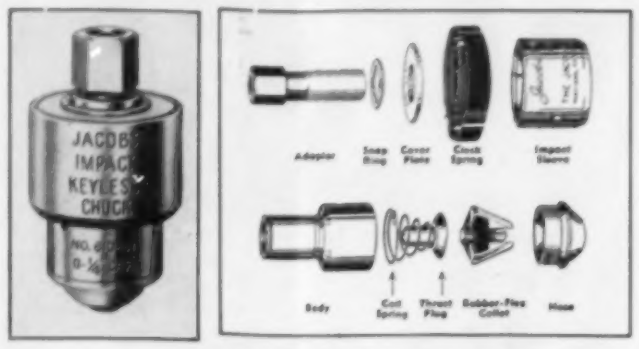
Address:

INDUSTRIAL EQUIPMENT NEWS
Thomas Publishing Company
A. J. GRANICK, Reader Service Manager
461 Eighth Avenue, New York 1, N. Y.

If you write maker identify as **IEN - 7323**

CHUCK . . Impact keyless design for portable tools, rates to ¼ inch

Source: JACOBS MFG. COMPANY
Jacobs Road, Dept. IEN, West Hartford 10, Conn.



For quick change and high torque duty

No key is required to open, close or lock this new Model 610-61 Impact Keyless chuck. Large and small drills, to ¼ in., are held true and tight by the Jacobs Rubber-Flex collet enclosed in the chuck nose. The mounting adapter at the rear of the body carries a ⅜-24 internal mounting thread for application on portable electric and pneumatic drills to operate at spindle speeds not greater than 5,000 rpm.

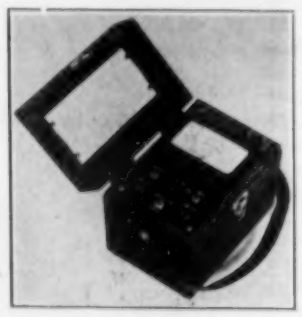
The chuck is opened, after the adapter has been secured on the tool spindle, by rotating it on the adapter. Forward movement on the adapter, for about ½ in., releases the jaws for maximum ¼-in. capacity. However since the collet is spring loaded the jaws will remain closed. They are opened by forcing the tool shank against the collet finger ends. The jaws are tightened by starting the drill and grasping the rotating body of the chuck back of the nose and holding it between the thumb and fore-finger for about a second.

The tool is released, after stopping the drill and grasping the impact sleeve between the palm and the middle two fingers of the left hand, while the spindle is at rest. Then the power switch on the tool is closed momentarily and, simultaneously, the impact sleeve is gripped and released. The sudden grip on the sleeve winds the clock spring contained within it. Quick release permits this spring to whirl the impact sleeve with a hammer blow force against a stop on the chuck body. This action spins the chuck forward on the adapter and releases the jaws. Then the drill can be pulled out.

If you write maker identify as **IEN - 7324**

TESTING . . Resistance meter for insulation tests to 500 volt dc.

Source: ASSOCIATED RESEARCH INC.
3762 W. Belmont Ave., Dept. IEN, Chicago 18, Ill.



Bulletin 2-2

Model 250 is a new instrument in the Vibrotest line to check insulation on transformers, circuit breakers, oil reclosers, power cables. It provides four ranges of resistance values from 1 to 50,000 megohms on dc. test potential of 500 volts. Operation is on 110-volt ac. Readings are independent of line fluctuations between 95 and 135 volts. The instrument is supplied in a housing with removable cover, and three 5-ft. test leads.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7325**

...the remote controlled "Lo-Hite" Hydraulic Jack with detached independent pump (note fig. 1 above) is a natural because the ram, only 4½ inches high (note fig. 2) fits in places where a jack handle cannot be used. Connected by 8 feet of strong rubber hose, it can safely and quickly move 30 tons, 2 inches in any direction.

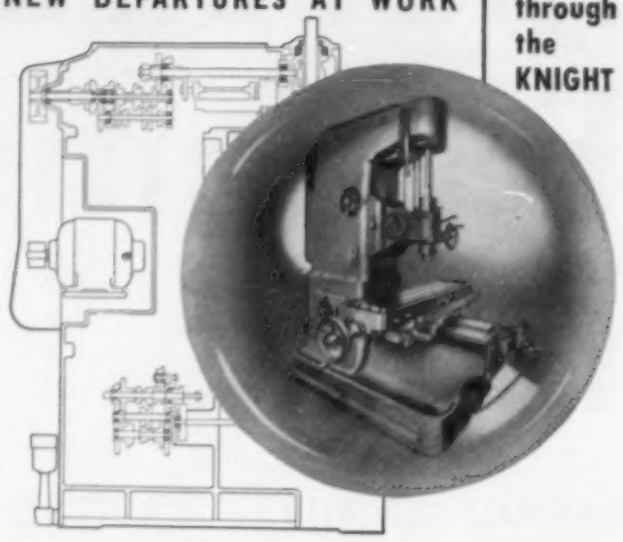
Ask your local distributor for the versatile "Lo-Hite" (No. 30-H-4.5) or write the world's oldest and largest manufacturer of lifting jacks for Bulletin AD32-M and name of nearest distributor, The Duff-Norton Manufacturing Co., P. O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON JACKS

"Giving Industry a Lift Since 1883"

If you write maker identify as **IEN - 7326**

NEW DEPARTURES AT WORK all through the KNIGHT



Combining great capacity with exceptional accuracy, W. B. Knight's No. 50 is a versatile milling and boring machine. New Departure **ball** bearing applications are found literally throughout the Knight. They assure rigid support of moving parts . . . maintain accurate pitch-line contact of gears . . . give longer life with minimum maintenance.

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

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FIRE!

Unless you get the jump on fire, you stand a good chance of kissing your business good-bye. That's why you need a Kidde portable extinguisher near *every* fire hazard in your plant.

Protect motors, electrical equipment, flammable liquids and machinery with Kidde portables. Then, when fire strikes, you're ready.

Grab a Kidde CO_2 or dry chemical portable, aim it, pull the trigger, and—Whoosh! Fire's out! Get protection – contact Kidde.

Kidde

Walter Kidde & Company, Inc.
736 Main St., Belleville 9, N. J.

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68 leak-proof joints in 2⅔ minutes

SIL-FOS brazing does it!

This job proves again that you can't beat SIL-FOS for brazing non-ferrous metals—and how easy it is to get fast, economical production with this low-temperature silver brazing alloy. Brazing return bends on the condenser and the evaporator of the FEDDERS room airconditioner is the job and below you see how it's done.

Return bends on condenser, with SIL-FOS rings preplaced, are gas-air burner brazed 3 rows at one time—40 joints in less than 1 minute. Evaporator bends are done same way—28 joints in 1⅔ minutes.

BULLETIN 20 TELLS HOW TO PLAN PRODUCTION BRAZING SETUPS that assure fast, low-cost metal joining. Write for a copy today.

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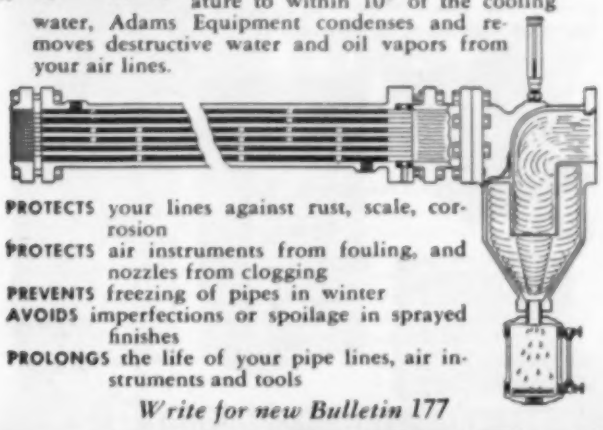
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 177

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN-7330

Anaconda researcher conducts tests on soldering through enamel film.

The answer to your soldering problem may be here—at Anaconda!

Soldering problem? A new soldering center was set up some months ago as a part of Anaconda's modern, active Development Laboratory. After months of testing, new facts—accurate, reliable—are beginning to come in. If you have a soldering problem, perhaps we can solve it for you out of the experience of the many laboratory tests and experiments we have already made. Ask your Anaconda Salesman, or write *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.*

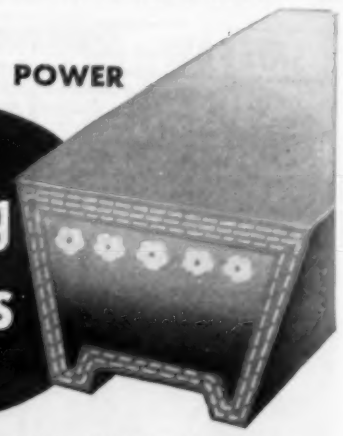
5442RA

TODAY'S HEADQUARTERS FOR MAGNET WIRE ANACONDA®

If you write maker identify as IEN-7331

FOR SMOOTH VIBRATIONLESS POWER

Browning FHP Belts



with the "SAFETY VALVE" feature

Uniformity is achieved by a specially designed safety channel in Browning FHP belts. During manufacture by a patented process, this channel adjusts in depth to compensate for inevitable variations in material quantities going into the mold. Side wall size and shape thus are held to *exact* specifications. Available in a wide range of sizes, with outside lengths in 1" increments up to 88".

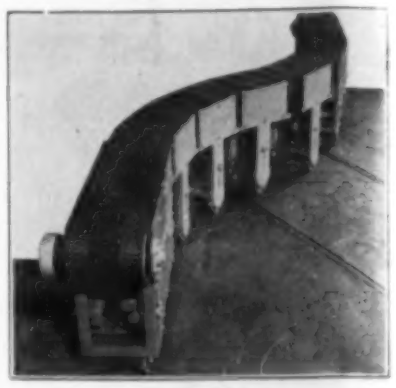
Ask your Browning distributor or write us for Catalog V147.

Browning MANUFACTURING COMPANY MAYSVILLE, KENTUCKY

If you write maker identify as IEN-7332

CONVEYING . . Metal mesh belt unit can be curved to avoid obstructions

Source: R. T. SHEEHAN COMPANY
8070 N. Territorial Road, Dep IEN, Plymouth, Mich.



Sold "by the car"

Obstructions in a plant department, material out of line, dips and rises in a floor surface, are not limiting factors in application of this new Flex-Bend metal mesh belt conveyor. It can be curved horizontally to right and left on a radius minimum at 54 inches. Each caster wheel, in its individual sections, or cars, can be raised and lowered through 6 in., from 30 in. above the floor line, to level the belt.

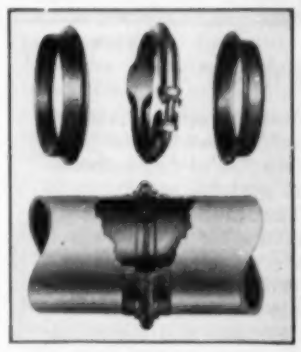
A motor in the head car is connected by means of a speed reducer to a shaft mounting two spiked pulleys that engage the belt positively. These pulleys are secured near the two ends of the shaft to provide clearance between them for guides that are attached to the belt undersurface. These guides ride inside central channel guide sections in the head, take-up and intermediate cars, so the belt will ride smoothly in "tracking" position for any curve path to which it is set.

The cars measure 39 in. in length at the head and take-up ends. The intermediate cars measure 18 inches. Any number of intermediate cars can be applied to make an assembly of desired length. A special drive unit is supplied when the length exceeds 30 feet. Three belt widths are 12, 18 and 24 inches. Load capacity is 50 lb. per running foot. Speed can be specified to 30 feet per minute. The belt supporting rolls and the pulley shafts are mounted on anti-friction bearings. Patents are pending on the design.

If you write maker identify as IEN-7333

TUBE FITTING . . Clamp coupling for exhaust gas lines from engines

Source: MARMAN PRODUCTS CO.
Box 12425, Dept. IEN, Los Angeles 64, Calif.



Heat resistant

Type J-61, of stainless steel, and Type J-62, of cold rolled steel, are available in this new joint design in sizes from 1 to 5 in. measured on the outside diameter of the tube. The coupling consists of two flanged collars to weld to the tube and a clamping ring that engages the flanges and completes the connection. Application is in coupling exhaust manifolds and exhaust pipe joints operating at normal internal combustion engine temperatures and at low internal static pressures. The design permits fast assembly and disconnecting. A special design, Type J-41, is made of stainless steel particularly for chemical and food processing plants.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7334

SAFETY EQUIPMENT FOR ALL INDUSTRIES

AVOID LADDER SLIPPING ACCIDENTS

•

UNIVERSAL LADDER SHOES

Meets the requirements for use on all types of floors and surfaces. Provides real ladder security. Approved by the Underwriter's Laboratories. Adopted by many companies for general service.

WRITE FOR BULLETIN NO. 9

IPCO Safety Equipment for all Industries

INDUSTRIAL PRODUCTS COMPANY

2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN-7335

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"LUBRIPLATE No. 630-AA is Practically a Universal Lubricant"

The Spokane Portland Cement Company of Irvin, Washington writes, "With the introduction of LUBRIPLATE No. 630-AA we reduced the number of lubricants we were using from ten to two. LUBRIPLATE No. 630-AA might almost be considered a *UNIVERSAL LUBRICANT*".

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2. LUBRIPLATE prevents rust and corrosion

3. LUBRIPLATE is economical to use

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Newark 5, N.J. Toledo 5, Ohio

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CASTELL push button LOCKTITE lead holder has PERFECT BALANCE

Perfect balance makes Push Button CASTELL LOCKTITE Holder the king of its class.

Exclusive collet holds lead in **bull dog grip**, preventing slipping or turning.

No graphite dust stains your fingers—because with one-hand push-button action you extend and retract the lead. *No need to touch graphite.* Comfortable "wood-pencil" feel—not metallic.

Equipped with easily-replaced clutch, giving your LOCKTITE indefinite life.

Imported CASTELL 9030 Lead inserted in your LOCKTITE Holder gives you the combination for brilliant results on your drawing board. Ask your Dealer for both—LOCKTITE Holder and Imported CASTELL 9030 Lead in 19 degrees, 7B to 10H.

AW FABER-CASTELL PENCIL COMPANY, INC., NEWARK 3, N. J.

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803 Articles
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40,000 Copies in use

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A LITTLE DOES A LOT

You may have heard about a highly successful solid-film lubricant which is giving remarkable results in the shop and in the field.

In one 40-page booklet we have collected 154 detailed case-histories describing how difficult lubrication problems have been overcome by molybdenum sulfide. If you wish to be up to date about this solid-film lubricant, write now on your business letterhead for a free copy.

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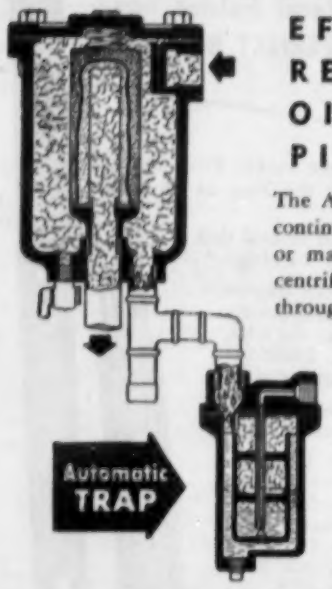
Poro-Stone Filtration
FOR COMPRESSED AIR



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Write for complete data
Bulletin 177

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Send for Folder AD1667 or ask your Crane Representative for full details.

Crane Wedge Disc Clamp Gate Valves come in OS&Y, inside screw, and quick-opening patterns, all-iron or brass trimmed. Sizes up to 4 in. Working pressures up to 150 psi saturated steam.

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F. Morse Smith — Vice-President in Charge
J. W. MOSS — Managing Editor
E. M. DALLDORF — Assistant
A. J. GRANICK — Circulation Manager
R. B. COHEN — Production Manager

EDITORIAL ASSISTANTS
M. L. Welsh; A. J. Willis

CIRCULATION AND READER SERVICE ASSISTANT
R. Lisak

BUSINESS DEPARTMENT ASSISTANTS
M. Casey; R. Irish; A. Kevelson; B. Sullivan

These are our local offices:		*Telephone*
Atlanta (6)	3 Ville Dr. N. E.	VErnon 2969
Boston (8)	50 Beacon Street	LAfayette 3-4688
Chicago (4)	20 West Jackson Blvd.	HArrison 7-3730
Cleveland (14)	3145 Superior Avenue	CHerry 1-2221
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NBP

VOL. 22 JULY, 1954 No. 7

Editing the News

Each specification that you draw up, or purchase you make of a new industrial product, for use in your plant or in your own products, involves you in two responsibilities. One is that the product perform satisfactorily in the duties you assign to it. The other is that it align itself with current major trends in order to avoid obsolescence for a reasonable life in service.

You can determine the probability of satisfactory performance from the specifications, the general characteristics that appear on the surface, and the manufacturer's guarantee. You must "look inside" with a practical background knowledge of industrial trends to be safe in assuming the second responsibility. You can make good use of all the impartial outside help you can secure to keep track of the trends for your own and your company's guidance.

IEN is in good position to observe trends as it reports hundreds of new products. It believes that constructive editing of the news includes every effort to keep you informed on the "inside facts" that go to make up trends as well as to report equipment availability.

A good example, particularly on the trend to minimize or control field lubrication and also on the trend toward field replacement of unit assemblies is contained in this issue in IEN-7347 on page 5, thanks to the first class publicity session that Jeffrey Manufacturing Company set up to introduce its new belt conveyor idler. Mr. Nevin J. Rodes of the company assembled a group of his engineers and representatives, brought along a sample of the new idler and invited the technical editors to come and see.

We were given a step-by-step description of the new development, including the very important "look inside". There was a type of bearing we on IEN had not seen before. There also was an idler assembly made up of unit assemblies that can be adjusted and lubricated individually in a plant or maintenance department where all conditions can be controlled and then can be taken out to the job to install with a minimum need for either equipment or skill. At the same time, the units permit field lubrication and adjustment.

There you have two trends in current equipment construction, one to modernize lubrication by eliminating need for added lubricant under conditions where control is limited, the other to take a leaf from the automotive builder's book and replace complete assemblies to rebuild worn assemblies under controlled conditions.

IEN could have published a dozen or so of lines and could have illustrated them with an external view of the idler assembly to tell you of the availability of the new equipment and there it could have stopped. Instead, with Mr. Rodes' help in supplying a section drawing of the sealed bearing detail, IEN takes you inside so you can see and judge for yourself. Thus we add another little piece to your own overall picture of products and trends with which to back up your product purchase decisions.

W. E. Irish.

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MAGNI-FOCUSER
Has fine ground lenses of optical glass. Neutralizes eye strain from close work. Binocular design gives third dimensional vision. Allows freedom of both hands. Wear over glasses. Plastic frame with adjustable headband.
SIZES: 20" focal lgth. 1½ power — 14" focal lgth., 1¾ power, 10" focal lgth., 2½ power; 8" focal lgth., 2½ power . . . . . price each ONLY 10.50

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SPECIAL
Gives 20,000 lb. thrust using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 3000 PSI. Can also be used on a low pressure air system. Has 4" bore; 18" stroke; 30½" long. Ideal for shop.
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See our complete line. Pullers for Gears, Bearings, Wheels, Pulleys, Bushings, Shafts, etc.

NEW 10 TON HYDRAULIC PRESS
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SIZE: 40" high 27" wide 29" base

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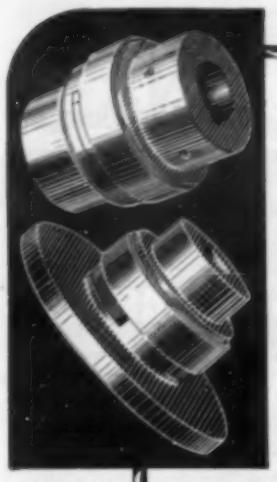
If you write maker identify as IEN-7344



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"RINGS and SHAPES *Since* 1921"

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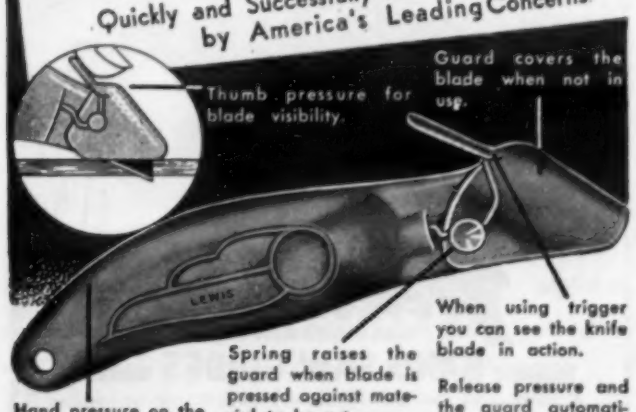

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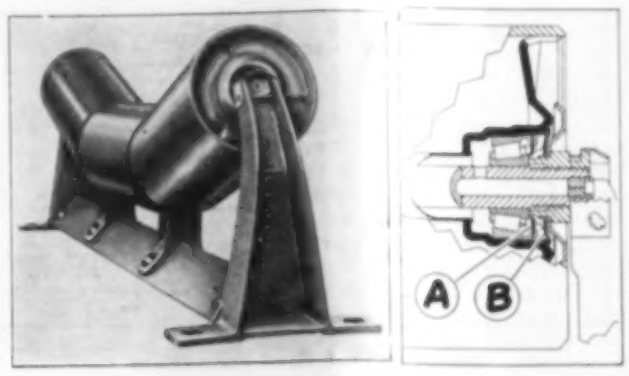
CONVEYING . . Belt idler retains lubricant, excludes dirt, water

Source: JEFFREY MFG. COMPANY
915 N. 4th St., Dept. IEN, Columbus 16, Ohio



Patents are pending

Lubricant, placed at the factory, cannot escape and foreign matter, dry or liquid, cannot penetrate into the Timken roller bearings in this new conveyor belt idler due to the two positive Duoflex seals on each bearing and the deflecting shields at the ends of each roll. Individual roll assemblies include the welded steel rolls, pressed steel heads, bearings, seals, end shields, fine threaded bearing adjusting nuts, the steel tube that connects the two heads and the central stationary tubular steel shaft or axle. Individual assemblies can be lifted out of their end brackets or dropped into place in the locking slots that engage the adjusting nut heads. Removable caps secure on the brackets to hold the assemblies in place. The arrangement makes it possible to limit field servicing to interchange of assembled factory lubricated rolls. It also permits field lubricating and bearing adjustment.

The idler is available in medium and heavy duty designs with roll diameters at 5 and 6 inches. Belt width capacity is 14 to 72 inches. Load rating is 9,500 ton per hour. Speed is to 500 feet per minute. Bracket supports are malleable iron, die straightened and bolted to the structural base to pitch forward 2 deg. for belt tracking. The medium duty design is available with ball bearings in place of the roller bearings. The line includes troughing assemblies, training troughing idlers, impact absorbing idlers, plain and return training idlers, spool return and spool return training idlers.

The inner shaft ends of the outer roll assemblies and both ends of the center roll shaft bear against neoprene connector blocks in the inner brackets to prevent lubricant leakage from the hollow shafts at these connecting points. The outer ends of the shafts in the outer rolls are fitted with vented plugs to relieve pressure built up at the time of lubricating and also to prevent promiscuous greasing. The end shields, located just outside of the stationary bearing seals on the adjusting nuts, approximate the contour near the hubs of the roll heads. They act as deflectors to keep falling materials and liquids from the seals. The roll heads are vented to "breathe."

The inner seals A, to rotate with the outer bearing races and retain the lubricant, and the outer stationary dirt excluding seals B, are made of synthetic coated flexible wafer-thin material. Both make positive feather-light contact against polished sealing surfaces. The outer seal is backed by a circular multiple finger beryllium spring. Positive contact, so light that wear is negligible, is maintained continuously so no grease can escape and nothing can enter.

The heads are coined in the forming process to take the outer races in a press fit against locating shoulders. These shoulders alternate with formed recesses to admit a race puller when the roll assembly requires overhaul.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7348

SOLENOIDS

A-128 solenoid; 18 lbs. at 85% voltage; 3" stroke.

AS-427 solenoid; 14 lbs. at 85% voltage; 2.5" stroke; 600 strokes per minute.

A-100 line of pure D.C. solenoids without cut-out switch; ranging from 1.5 lbs. to 100 lbs.

AS-400 line of high speed solenoids ranging from 1.5 lbs. to 14.0 lbs. Speed up to 600 strokes per minute.

We recommend that you get acquainted with these two lines of solenoids. They can do things for you that you never thought could be done.

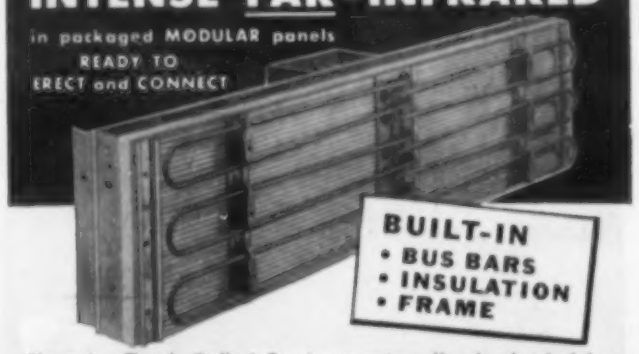
We make 44 other standard lines of solenoids. Also solenoid brakes up to 24,000 ft-lbs. torque capacity.

See our catalogs in Sweet's Catalog Service. Ask for more information.

TROMBETTA SOLENOID CORP.
329 N. MILWAUKEE STREET • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN-7349

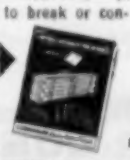
NOW CHROMALOX GIVES YOU
INTENSE FAR-INFRARED
in packaged MODULAR panels READY TO ERECT and CONNECT



Chromalox Electric Radiant Panels generate uniformly absorbed far-infrared heat for baking, drying, curing and other uses. Temperatures up to 700° F. are easily selected and accurately held with "dialed" controls.

THESE ADVANTAGES—AND MORE!
- Longer Wave Length—absorbed equally fast by all colors.
- High Intensity Radiation—more watts per square foot.
- Infinitely Variable Output—from 0% to 100% of capacity.
- Shatter-proof Construction—nothing to break or contaminate work.

GET THIS BULLETIN → It shows you how Chromalox Radiant Panels can save you time, money, work.



OVEN BUILDING SIMPLE AS A-B-C
1' x 4' and 2' x 4' pre-engineered panels quickly assemble into ovens.

Industrial Radiant Heating Division IB-27

EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Electric Units Adv., Page 55

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN-7350

Easy on the Fingers!
for holding
★ STEEL STAMPS
★ CHISELS
★ OTHER HAND TOOLS

"Luminum-Line" ADJUSTABLE
HAND TOOL HOLDER

Keep precious fingers safe from off-angle hammer blows. Just place the hand tool in the holder and hammer away—with greatest possible safety. Three sizes available for tools ¼" to 1¼" square.

Write for Catalog 100

Mecco SAFETY MARKING TOOLS
M.E.CUNNINGHAM CO.
1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN-7351

ALLIS-CHALMERS
Induction HEATER

Anneals 7000/hr

Allis-Chalmers 20-kw Induction Heater shown with A-C designed and built work handling fixture.

IN PRE-PRODUCTION tests, this Allis-Chalmers Induction Heater annealed steel shell cases at the amazing rate of nearly 2 per second. Not only is this heating unit a fast worker, but it's a clean worker — and a cool one, too! It puts the heat into the metal where it belongs — holds down the ambient.

Whether your problem is annealing, hardening, brazing, or soldering, find out what an Allis-Chalmers Induction Heater can do for you. Standard ratings to 100 kw output are available. Call your nearby Allis-Chalmers, Milwaukee 1, Wisconsin. A-4405

ALLIS-CHALMERS A-C

If you write maker identify as IEN - 7352

If you write maker identify as IEN - 7353

.....AMERICAN MONORAIL CRANES

for smooth operation at low maintenance cost use.....

Three-ton hoist hook service extends from craneway to craneway by finger-tip controlled passage of carrier across crossover with cranes interlocked at each end.

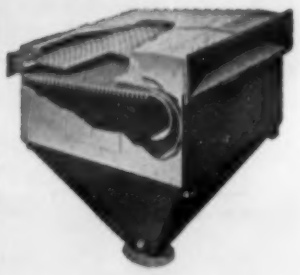
To handle variable loads over maximum areas, Mono-Rail Cranes offer smooth travel, easy movement, interlocking service between and beyond craneways, low initial cost and most important low maintenance cost. American MonoRail engineers are experienced in all phases of "up and over" handling. They are available for free consultation at your convenience.

WRITE FOR C-1 BULLETIN

THE AMERICAN MONORAIL COMPANY
13111 ATHENS AVENUE • CLEVELAND 7, OHIO

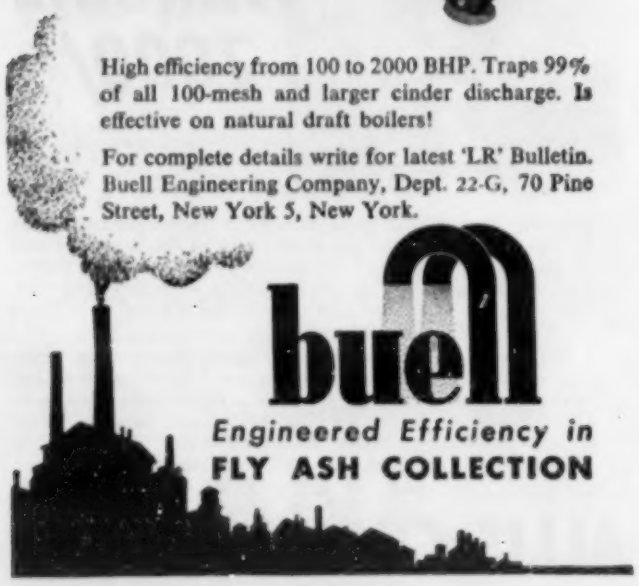
If you write maker identify as IEN - 7354

Buell-designed 'LR' Collector Stops Fly Ash From Small Boilers!



High efficiency from 100 to 2000 BHP. Traps 99% of all 100-mesh and larger cinder discharge. Is effective on natural draft boilers!

For complete details write for latest 'LR' Bulletin. Buell Engineering Company, Dept. 22-G, 70 Pine Street, New York 5, New York.

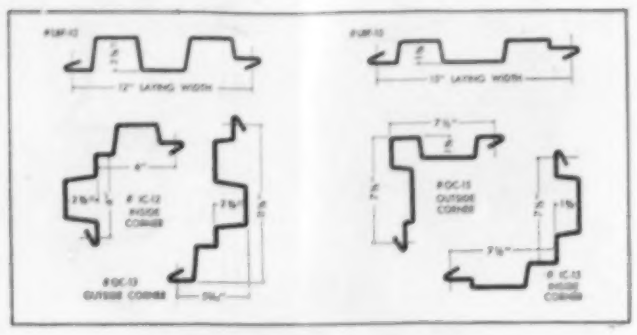


buell
Engineered Efficiency in
FLY ASH COLLECTION

If you write maker identify as IEN - 7355

CONSTRUCTION . . Steel piling in light weight interlocking design

Source: L. B. FOSTER COMPANY
Box 1647, Dept. IEN, Pittsburgh 30, Pa.



Particularly for small excavations

Lightweight Piling is a new box type section available in 8 and 10-gage steel and in 12 and 15-in. laying widths. Any length can be specified to 36 feet. The piling is cold rolled from hot rolled sheet and is intended for installations that have previously employed wood sheeting. Examples are shore and pier protection, sewer trenches, building excavations, abutments, bulkheads, cut-off walls, cofferdams.

The interlock design permits two sheets to be lapped together to form a water tight joint. It is not necessary to slide one sheet into another for its entire length. The box type corrugation simplifies the use of bracers, walers and other types of reinforcement. The piling can be placed without the use of a rig and can be handled readily by two men. The company is prepared to lease a specially designed driving head and also to supply pulling tongs.

If you write maker identify as IEN - 7356

ELEVATOR . . Hand operated unit to lift work pieces stored in a drum

Source: ACTRON ENGINEERING CO.
11934 Lorain Ave., Dept. IEN, Cleveland 11, Ohio

Lift work to work height

Drumvator is a new assembly of circular plate and centrally located vertical stem to apply with a tripod hand operated lifting frame. The plate applies in a standard 55-gal. drum. It measures 22¼ in. in diameter. The stem projects upward above the top of the drum or can be telescoped down so its top is beneath the drum top. In raised position, it passes through the hoisting tripod, which rides the drum, so parts loaded into the drum above the platform will be raised a notch at a time as the lever is operated.

The new device makes it unnecessary to reach down into a drum to pick out the work pieces. The tripod can be left in place or removed when the drum is to be moved to a new location for storage or for refilling. Load capacity is 1 ton. Complete assembly lists at $26.50. Additional platforms and center stem add $12.50 each. The tripod frame adds $15.75.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7357

BUILD YOUR OWN OVERHEAD CONVEYOR!

This detailed, illustrated FREE 28-page book tells how!

You, too, can build your own light-duty, power-driven, overhead monorail conveyor with Junior Monoveyor. This 28-page booklet (Bulletin JM2) tells you in detail how to make your layout, select the parts you will need, and install them. All elements are fully illustrated, all sizes and capacities given.

WRITE FOR YOUR COPY TODAY!

MECHANICAL HANDLING SYSTEMS INC. AND SUBSIDIARIES
4605 NANCY AVE., DETROIT 12, MICH.
Offices In Principal Cities
FACTORIES: Detroit, Mich. • Fairfield, Iowa • Albany, N.Y. • Windsor, Ont.

If you write maker identify as IEN - 7358

First time offered!

This latest bulletin of data on

Get your **Free Copy Now**

Engineering Properties of **"S" Monel**

Whenever you're looking for hardness and anti-galling properties in a corrosion-resisting casting, here is an engineering bulletin that gives you the answers in a jiffy.

It describes "S"® Monel. It gives composition...physical constants and mechanical and compressive properties . . . information on thermal expansion . . . endurance limits . . . impact values . . . hot hardness . . . machining speeds . . . and much more.

Here, for the first time in handy form, are all the known facts about "S" Monel. For your free copy of this valuable bulletin, simply circle our number on the I.E.N. reply card.

THE INTERNATIONAL NICKEL COMPANY, INC.
75 Wall Street New York 5, N. Y.

If you write maker identify as IEN - 7359

13 head sizes—ONE welding pressure

New PUROX welding heads ALL operate at same regulator setting

Spend more of your time welding. Set your regulators once and weld all day without touching them again, no matter how many head changes you make. PUROX Welding Heads in 13 sizes (2 to 100 cu. ft. per hour capacity), all operate at equal oxygen and acetylene pressures of 5 to 8 lb. per sq. inch.

Ask your LINDE jobber for a demonstration today, or write for more details. LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, N. Y. In Canada: Dominion Oxygen Company, Toronto.

• **PUROX** Welding Apparatus
Trade-Mark
• see your **LINDE** jobber

The terms "Linde" and "Purox" are registered trade-marks of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 7360

Sturdy, Strong, Band-Saw Guide

MODEL 20

Paddock
BALL-BEARING
BAND SAW GUIDES

A sturdy guide that lasts for years, MODEL 20 can be installed on machines having 2½" back of blade to guide post and is designed to work above or below saw table. Cut-out section of illustration shows V-shape groove of thrust wheel which supports and holds back of blade. Interchangeable ball-bearing wheels run with blade and give friction-free support to blade. Easier and better adjustment for thrust wheels for ⅛" to 1¼" wide blades. Models for large or small machines. Write for complete details. Give size, make of machine on which guide will be used.

SHIPPED ON APPROVAL WHERE VALUE IS QUESTIONED

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut Street Kansas City, Missouri

If you write maker identify as IEN - 7361

SAVE 3 WAYS

WITH STAYNEW HYDRAULIC FILTERS ON YOUR EQUIPMENT

MODEL HE
Hydraulic Filter

1. SAVE WEAR ON COSTLY EQUIPMENT
2. SAVE SPOILAGE AND REJECTS AT POINT OF USE
3. SAVE MAN HOURS WASTED IN EQUIPMENT REPAIRS AND MAINTENANCE

For top performance and economical operation, specify Staynew Filters as original equipment on your hydraulically operated machinery. All types of metallic mesh and fabric media are available.

Our Engineering Department will welcome the opportunity of recommending the type of Staynew Filter best suited for your specific need. Write today for Bulletin HF-2.

Representatives in Principal Cities

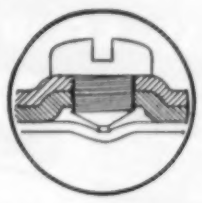
DOLLINGER STAYNEW FILTERS

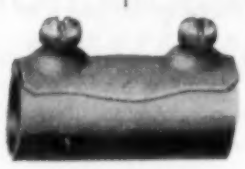
DOLLINGER CORPORATION
3 Centre Pk., Rochester 3, N. Y.

ALL TYPES OF FILTERS FOR EVERY INDUSTRIAL NEED

If you write maker identify as IEN - 7362

VIBRATION PROOF!





COUPLING

CONNECTOR

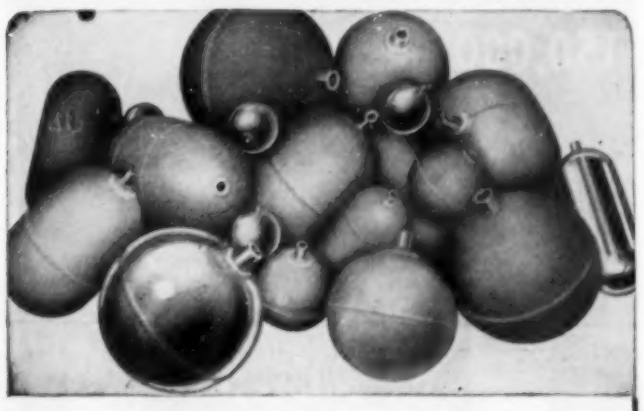
E.M.T. FITTINGS

A screwdriver is all you need to install these simplified one-piece, pressed-steel fittings. Steel overlap at screw increases pressure — assures close, accurate fit—makes NE fittings vibration-proof! Sizes ½", ¾" and 1".

ASK FOR BULLETIN 581

National Electric PRODUCTS CORPORATION
140 Stanwix St., Pittsburgh 22, Pa.

If you write maker identify as IEN - 7363



Send for Nicholson

FLOAT BULLETIN 753

Complete Data on Welded Floats: Diagrams, Tables, Formulae for Calculating Buoyancies

The booklet is a standard reference for specifiers of welded floats. Nicholson furnishes any type: for external or internal pressure: in stainless steel, Monel, chromium, cadmium or copper-plated steel. Sizes, 2" to 14" diam., press. to 4800 lbs.; standard or special connections. Quick delivery on many sizes and shapes. Nicholson floats are standard with hundreds of manufacturers.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS
159 Oregon St., Wilkes-Barre, Pa.

If you write maker identify as IEN - 7364

COMMUNICATING . . Insulated box to mount a television camera safely

Source: TENNEY ENGINEERING CO.
1090 Springfield Road, Dept. IEN, Union, N. J.

Sets up anywhere

A television camera can be employed in any location when it is enclosed in this new heated, ventilated and insulated aluminum box with its lens directed at a thermopane window at one end. The camera mounts on an adjustable bed plate so a 2, 4, or 6-in. lens can be employed. The window is fitted with remotely controlled windshield wipers. They operate outside to keep the surface clear from rain and inside to prevent condensation from collecting.

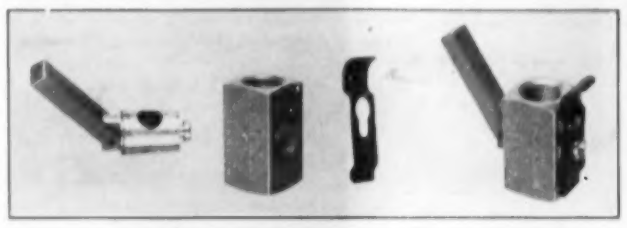
Electric ribbon heaters are mounted along the inside walls and are thermostatically actuated when the temperature drops below 40 deg. F. A fan is similarly controlled when the temperature exceeds 40 deg. F. Air is filtered in through the bottom of the box and exhausted by a permanently lubricated motor driven fan through a filter protected outlet at the rear. The box is designed to mount on a tripod.

Typical uses include remote traffic control in railroad yards, patrolling unprotected areas such as warehouses, viewing high temperature processes, observation of hazardous operations that require the operators to remain at a safe distance, observation of extreme temperature, altitude testing of equipment intended for the Armed Forces.

If you write maker identify as IEN - 7365

VALVE . . Brass plug cock for quick cleanout of coolant lines

Source: TIMESAVERS FOR INDUSTRY
1522 First National Tower, Dept. IEN, Akron, Ohio



For pipe lines subject to clogging

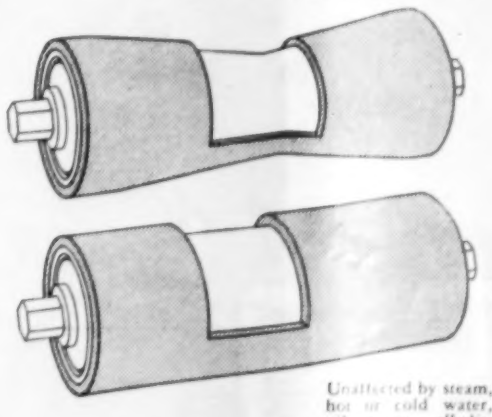
Coolant flow is regulated by this new Takedown valve. At the same time, the valve provides for quick access to a coolant line that has become plugged to permit blowing the obstruction out and resuming operation with minimum delay. The valve consists of a tapered brass plug, carrying a Tee-head at one end and a pivoted operating lever at the other, with a threaded brass body made of square bar stock and a leaf spring with a keyhole slot that engages the Tee.

The spring holds the plug in normal operating position. It can be removed quickly so the plug can be withdrawn from the body to provide access to a chip clogged or sludge loaded coolant line. Immediately upon clearing the line, the plug can be reinserted and the spring replaced to resume operation.

Three sizes carry ⅜, ½ and ¾ in. thread connections. List price ranges from $3.25 to $4 each, subject to a discount of 5 per cent in lots of 25. Spare springs are 35 cents.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7366



Unaffected by steam, hot or cold water, oil, grease, alkalis, salts and inorganic acids

Now . . . New . . . Neoplastic

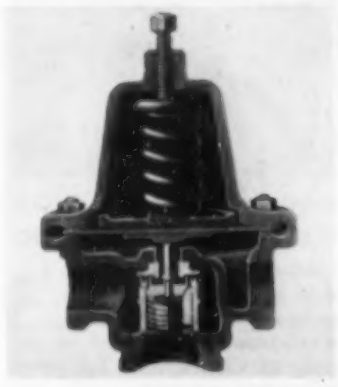
Must your product be handled with care? Neoplastic covering for conveyor rolls is improved in several ways, over old-style rubber and neoprene coverings. Developed by Logan, applied by Logan . . . quality is constant and delivery time is rapid. Thickness usually specified is ⅛" to ¼" but this can be increased. Neoplastic qualities are similar to neoprene but superior in some respects. Neoplastic price is generally lower than other such materials. Details on request.

LOGAN CO., 276 Cabel St., Louisville, Ky.

Logan Conveyors

If you write maker identify as IEN - 7367

RUBBER DIAPHRAGM PRESSURE REGULATOR FOR AIR OR WATER SERVICE



Particularly suitable where moderate original cost is necessary without sacrificing dependability or accuracy. CASH STANDARD Type Y Pressure Regulators maintain a constant reduced pressure regardless of fluctuating initial pressure or intermittent demand. These exceptionally sturdy valves are supplied with a spring-loaded rubber diaphragm and are available in sizes ¼ to 1 inch. They normally come with iron or bronze body, bronze trim, for air or water service. For air service: Highest initial pressure 250 lbs.; highest delivery pressure 125 lbs. For water service: Highest initial pressure 300 lbs.; highest delivery pressure 125 lbs.

Complete information in Bulletin No. 949

A. W. CASH COMPANY
P. O. Box 551 • Decatur, Illinois

If you write maker identify as IEN - 7368

Anyone can see

Yes, SHAFER Bearing quality is instantly apparent to anyone who has seen the efficient performance of industry's most reliable pillow block for the toughest applications.

Unique convex design of inner race in effect supports the shaft on a free-rolling ball (instant self-alignment), and that ball rolls naturally on matching concave surfaced rollers (high thrust and radial load capacity).

You can see that SHAFER Pillow Blocks hold the answer to your anti-friction bearing problems. Available in wide range of sizes, and housing options. Send today for Engineering Bulletin 51 containing full information. SHAFER Bearing Division, 801 Burlington Ave., Downers Grove, Illinois.

SHAFER BEARING DIVISION
CHAIN BELT COMPANY

If you write maker identify as IEN - 7369

Free

NEW BELT CONVEYOR CARRIER DATA

Full information on new low-priced 745 series belt conveyor carriers now available for immediate delivery from stock. New carrier simplifies ordering and stocking for many applications. Bulletin No. 554 tells how to order and install—describes design features usually found only in higher priced carriers. Mail coupon for your copy today.

745 Carriers are available from stock for 18", 24", 30" and 36" conveyor belts.

STEPHENS-ADAMSON MFG. CO.
Standard Products Division
231 Ridgeway Ave., Aurora, Ill.
Please send me Bulletin 554 on 745 Carriers
Name.....
Company.....
Address.....
City..... Zone..... State.....

If you write maker identify as IEN-7370

BEWARE THE LAMPANTHER

The *Lampanther* lurks in every poorly lighted plant, always prepared to pounce on profits and rip maintenance economy to shreds. Send him scurrying with his tail between his legs. Keep on hand an ample supply of CHAMPION Lamps and follow the simple, sensible suggestions in the *Champion Maintenance Manual.**

**May we mail you a complimentary copy of the Manual?*

CHAMPION LAMP WORKS
600 Broad Street • Lynn, Massachusetts

If you write maker identify as IEN-7371

MAKE YOUR OWN CRANE...
...at a NEW LOW COST!

Handle loads up to 2000 lbs., SAFELY,
easily... Buy crane beam locally—we furnish the rest... A pair of self-aligning, ball bearing Flexo-Crane trucks cost only..... $119.00
Simple instructions come with shipment.

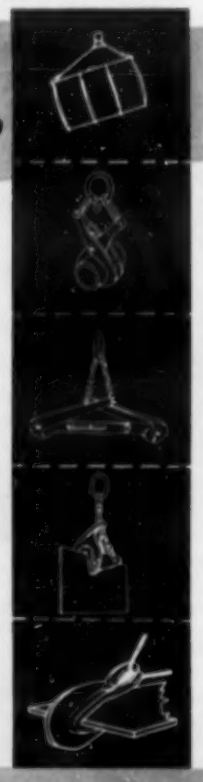
Complete Flexo-Crane, with hoist and accessories, is also economically priced. To get full details, ask for—
BULLETIN F-136

The Abell-Howe Line includes a wide range of overhead cranes monorails, hoists and accessories.

ABELL-HOWE COMPANY 53 W. JACKSON BLVD. CHICAGO 4, ILL.

If you write maker identify as IEN-7372

PICK 'EM UP
Faster..Easier



DOWNS SAFETY GRABS
...GRIP ANYTHING!

Yes we said anything—add shapes, round, oblong, square or even loose objects such as bags or bundles. Best of all you save money on your handling problems while protecting employees.

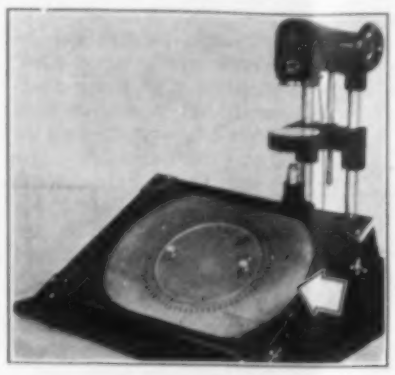
Downs Safety Grabs are engineered to provide a load safety factor greater than rated capacity plus a Bulldog grip that won't let go until you release the load. There's a Downs hook, grip, tong or sling to fit every handling problem. Write for free illustrated catalog 200 today!

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. VERNON AVENUE • LOS ANGELES 37, CALIF.

If you write maker identify as IEN-7373

GAGE . . Plastic protractor chart for application on optical projector

Source: GEORGE SCHERR OPTICAL TOOLS INC.
200 Lafayette St., Dept. IEN, New York 12, N. Y.



On a Wilder Projector

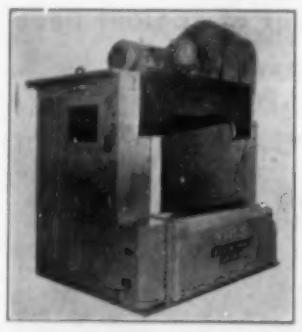
Angle measurements, for any position in a circle, can be made quickly and accurately with this new plastic gage protractor chart. It has been designed for use on the company's Wilder Micro-Projector and on other types of projectors, not equipped with protractor screens or rotary tables. It eliminates need for angular drawings or for mechanical protractors in making angular measurements.

Construction is in unbreakable satin finish plastic that is not subject to attack by moisture or temperature change. The line also includes standard projector charts such as screw threads, radii and grids or special charts and fixtures to meet given needs.

If you write maker identify as IEN-7374

WELDING . . Press type machine to operate multiple spot electrodes

Source: E. W. BLISS COMPANY
1375 Raff Road, S. W., Dept. IEN, Canton 10, Ohio



Enclosed wiring

Illustrated is new design of the press type welding machine, previously described IEN-524-52. The machine is available with bed measurements at 12 in. in depth and 42 to 84 in. in width. Stroke is 8 and 10 in. or 8 and 12 inches. Drive can be mounted on the top of the press or beneath it, depending on available headroom. In both cases, the lower die moves up to contact a stationary upper die.

Work to be spot welded is positioned on the lower die where it rests on welding tips that face upward. Engaging the driving clutch moves the die up to bring the work into contact also with fixed welding electrodes secured in the upper part of the housing. The slide dwells in "up" position and applies pressure between the electrodes and the work until the welding operation is completed.

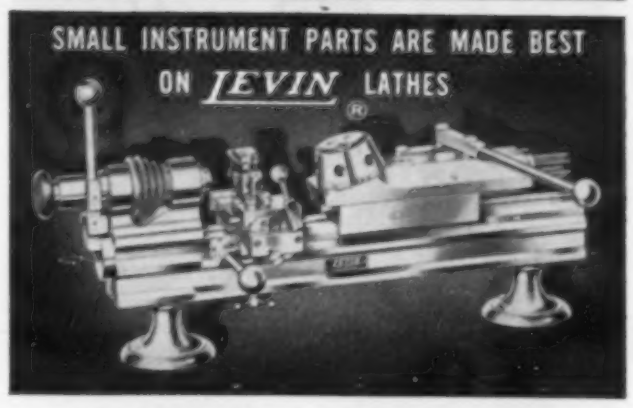
If you write maker identify as IEN-7375

Ceramic container measuring 2½ by 2½ by 2 in. inside, with about a ¼-in. wall thickness, is offered by ZoKal Solder Tip Sales, 2532 Lincoln Ave., Dept. IEN, Chicago 14, Ill., to clean soldering tips. The container can be used also to hold various types of flux, acid and liquids, as well as small parts for use in an assembly line. List price is $1.25 each.

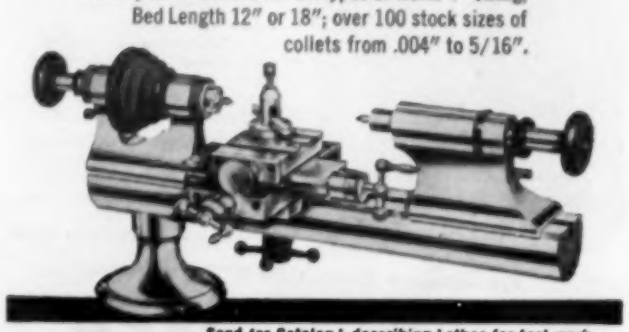
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7376

If you write maker identify as IEN-7377



Twenty-three models for all types of work. 4" swing. Bed Length 12" or 18"; over 100 stock sizes of collets from .004" to 5/16".



Send for Catalog L describing Lathes for tool work, second operations; turrets and full line of accessories.

LOUIS LEVIN & SON, INC., 3610 S. Broadway, Los Angeles 7, Calif.

If you write maker identify as IEN-7378

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

DANGER NO SMOKING, MATCHES OR OPEN LIGHTS
CAUTION WEAR GOGGLES WHEN USING THIS MACHINE
NOTICE KEEP THIS PASSAGEWAY CLEAR
SAFETY FIRST KEEP OUT
THINK A FIRE TO-DAY NO JOB TO-MORROW

SAVE The WORKER and you SAVE PRODUCTION

Stonehouse Signs are made in accordance with "American Standards Ass'n Specifications for Accident Prevention Signs"...the only authentic standards.

Hundreds of different stock-worded signs for prompt shipment • Special worded Accident Prevention signs also produced to your specifications.

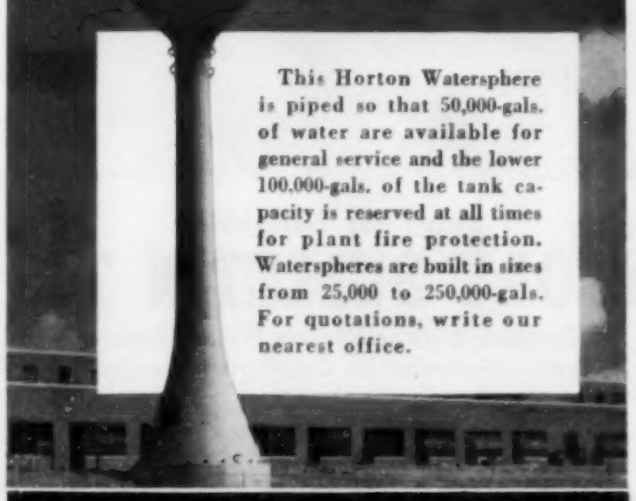
Our complete Catalog No. 9, 64 pages, full color, free on request.

Stonehouse SIGNS, inc. MANUFACTURERS
Stonehouse Building • 842 Larimer
Denver 4 Colorado
"Signs Since 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

If you write maker identify as IEN-7379

150,000 gal. Watersphere
piped for Fire Protection and General Service

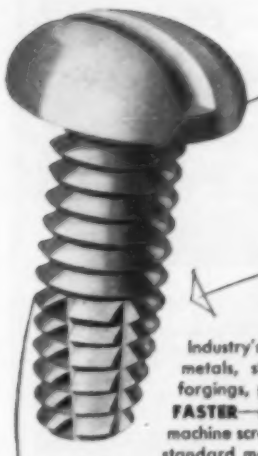


This Horton Watersphere is piped so that 50,000-gals. of water are available for general service and the lower 100,000-gals. of the tank capacity is reserved at all times for plant fire protection. Waterspheres are built in sizes from 25,000 to 250,000-gals. For quotations, write our nearest office.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit
Houston • Los Angeles • New York • Philadelphia • Pittsburgh
Salt Lake City • San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN - 7380

The simpler way to save on fastenings to metal and plastics



P-K

Hardened Self-tapping Screws

Type F Slotted or Phillips

Industry's favorite for fastenings to sheet metals, structural steel, castings, non-ferrous forgings, plastics, plywood, hard compositions.
FASTER—no tapping. Simpler, faster than machine screws, riveting, or bolting. Type F cuts a standard machine screw thread as it's turned in.
STRONGER—no loose fits, or cross-threading. Defies vibration, as proved in millions of applications.
LOWER COST—saves tapping time and tool expense, permits use of faster power drivers.
IF IT'S P-K... IT'S O.K. For guaranteed quality, get the *Original*. Samples free. Ask your P-K Distributor or write for information to: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

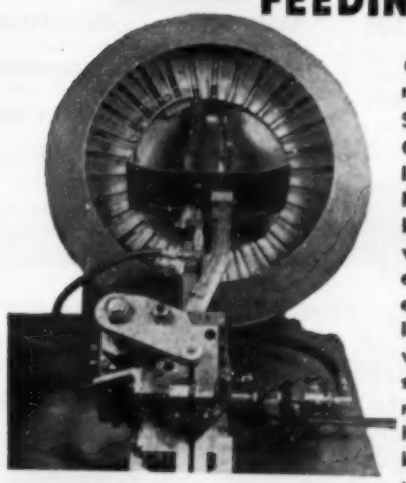
PARKER-KALON®
The Original **SELF-TAPPING SCREWS**

If you write maker identify as IEN - 7381

Get on the Right "TRACK" with your SMALL PARTS!

• DISCARD SLOW MANUAL FEEDING!

Use DPS SELECTIVE FEEDING DEVICES



● Note the improvement in Lower Costs, Speedy Production, Quality Control and Increased Profits . . . Now this DPS contribution to the metal-working industry is emphasized in an expanded line of selective feeding devices and engineering service . . . Tell us your requirements; we have the unit and the know-how to meet your needs.

DPS BARREL-FEEDER

● Above is an interesting case showing separate screws and lock washers that were loaded into a single feeder and ejected loosely assembled at the rate of 60 to 70 a minute . . . An amazing speed increase over slow, manual operation. In this instance, as in thousands of other applications, the unit was designed with the idea of maximum feeding of a wide variety of parts at a fraction of the cost of manual feeding.

DPS BOWL-FEEDER

Our Newest Addition

● An electric, vibrating unit that advances the parts on a circular spiral, aligning and correctly locating them to issue directly into the work area in proper time cycle. Provides fully automatic feeding of light, fragile parts that normally could not withstand tumbling.

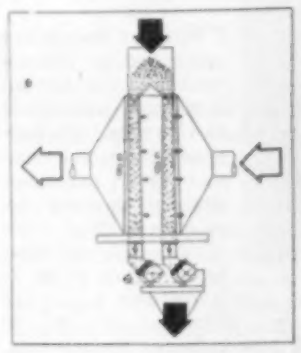
Let us diagnose your symptoms and prescribe the proper remedy. Write for details.

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICH.

If you write maker identify as IEN - 7383

DUST COLLECTING . . Louvered cells hold granules to pick up dust, fumes

Source: MECHANICAL INDUSTRIES INC.
956 Grogan Bldg., Dept. IEN, Pittsburgh 22, Pa.



To 60,000 cfm.

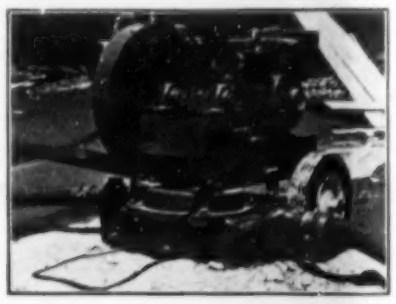
Impingo Filter trade names a new collector employing moving granules rather than cloth bags or water sprays to remove dust, fumes, smoke from a flow of air or gas. The equipment is suited also for by-product recovery and is supplied to meet specified requirements. Dirt laden air or gas enters at one side, passes through louvers in the first of the cell banks, to strike against granules in that cell. Solid matter, carried by the gas, impinges on the granules and adheres. The clean gas passes through labyrinths in the granule stream to leave that cell by the louvers on the opposite face. An assembly can contain two or more cells arranged in parallel or series.

Simplest form, shown in the diagram, is a two-cell parallel flow assembly in which the granules move through a top storage to the cells and pass downward in the cells to rotary valves at the bottom with the dirt they have picked up. They can be washed, after passing through the valves, and then recirculated to the supply hopper at the top. A series of cells can contain more than one size or kind of granule, each to serve a given purpose such as moisture absorption, dust removal, chemical composition change.

If you write maker identify as IEN - 7384

PUMP . . Reciprocating diaphragm handles water containing mud and sand

Source: MARLOW PUMPS
Box 566, Dept. IEN, Ridgewood, N. J.



Negligible vibration

Water and entrained solids are drawn in and discharged in straight line flow through fabric reinforced rubber flapper valves by the reciprocating action of the diaphragm in this new design of the company's diaphragm pump. The unit is intended for mobile application and is mounted on two rubber tired wheels. It can be tilted on these wheels to expose the diaphragm for inspection or replacement, after removing four bolts on the pump frame. The identical suction and discharge valve assemblies make it possible to reverse flow direction by reversing the two valves and seats.

Two sizes, known as Models 202A and 302A, take 2 and 3-in. hoses and rate 50 and 55 gpm. Both are self-priming and operate on suction lifts to 20 feet. Both can be employed with total liquid heads to 40 feet. Overall dimensions are 45½ by 29½ by 30½ inches. Drive is by a slide mounted chain connected Briggs & Stratton engine rating 2 hp. on continuous duty.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7385

NEWLY DESIGNED TRAP

virtually eliminates maintenance!

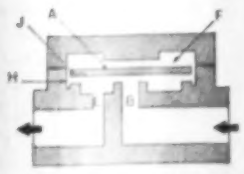
Most striking feature of this trap is its simple design. Only one moving part—a solid stainless steel disc—virtually eliminates maintenance.

The trap is small, easily installed, immune to water hammer, vibration and corrosive elements. Uses same valve seat and head for all pressures to 600 psi and temperatures to 950°F.

Check these advantages to your own satisfaction. Write today for a free trial trap giving size, capacity and pressure conditions.

SARCO COMPANY, INC.
EMPIRE STATE BLDG., N.Y. 1, N.Y.

SARCO *Thermodynamic* TRAP



HOW IT WORKS!

Air and condensate raise valve seat disc A, discharge thru E. When steam follows, greater velocity causes it to strike body at H thus building up pressure in chamber F. This causes disc to seat closing tube B. As pressure in F decreases by condensation and leakage thru slot J, pressure in tube B raises disc and cycle is repeated.

If you write maker identify as IEN - 7386

Pines Series 1400 production bender installation at Quaker Stretcher Company, Kenosha, Wis.

HOW SMALL PINES *Hydraulic* BENDERS SPEED OUTPUT of TV SERVETTE TRAYS

At Quaker Stretcher Co., Kenosha, Wis., four Pines Series 1400 Benders are producing high quality bends for TV servette tray legs at unusually low cost. Two smooth, 90° bends on a 2" CLR are formed in 5/8" x .018" wall, roller-coated, lock-seam tubing *without marring the black enamel finish.* The machines, costing under $2000.00 each, are operated by women. High efficiency is maintained. *Net production per machine averages 452 bends per hour,* and the only scrap loss is a very few pieces while making setups. Pines Series 1400 Benders feature small capital investment, fast, easy operation, and uniform results. Hydraulic actuation assures dependable accuracy, low operating cost.

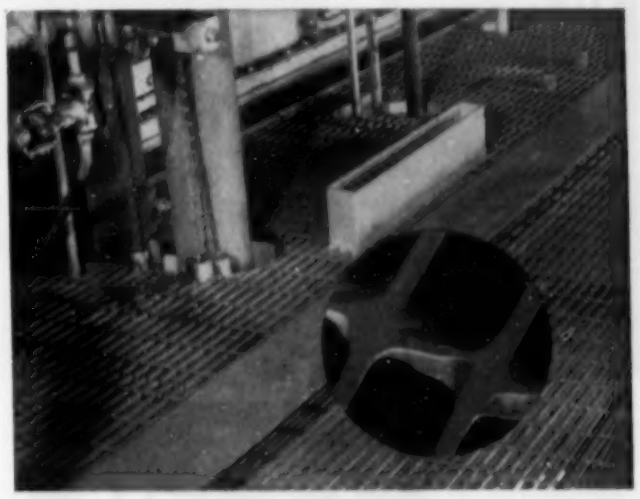
Closeup showing easy-operating manual toggles, simple tooling. Plug mandrel, Ampco bronze wiper die produce smooth, mar-free bends in pre-coated stock.

Free DATA SHEETS

Write for free copies of "Pines News" illustrating latest cost-cutting bending techniques. Or, call on Pines Engineers for assistance on any job.

PINES ENGINEERING CO., INC.
Specialists in Tube Fabricating Machinery 8050 WALNUT • AURORA, ILLINOIS
PRODUCTION BENDING • BEADING • CHAMFERING MACHINERY

If you write maker identify as IEN - 7387



Grating by BLAW-KNOX

what can steel grating do for you?

You naturally think of steel grating for floors, platforms, walkways, catwalks and stair treads.

But have you ever thought of how steel grating can make your danger spots safe . . . by covering an unprotected open pit or light well, by guarding a fan, by providing some sturdy shelving, or by serving some purpose you'd never thought of before. Look around your plant, both inside and outside, to see where you can use versatile steel grating . . . to make your plant an even better, safer place to work.

If you come across some tough problem on a grating application, we'll be glad to offer our suggestions.

Only Blaw-Knox Electroforged® Steel Grating and Stair Treads —have these five exclusive features:

1. rigid one-piece construction —easy to install
2. all surfaces accessible —easy to paint
3. no sharp corners to clog —self-cleaning
4. maximum open area —for light and ventilation
5. non-slip twisted crossbar —safe footing

A short note will bring you a copy of new Bulletin No. 2365-R —a dimensional sketch will bring you a quotation.

BLAW-KNOX

BLAW-KNOX COMPANY
2050 Farmers Bank Building
Pittsburgh 22, Pennsylvania

BLAW-KNOX EQUIPMENT DIVISION GRATING DEPARTMENT

GRATING APPLICATIONS: floors • platforms • walkways • catwalks • stair treads • fan guards • shelving • and many other uses, both outdoors and indoors, for versatile steel grating

If you write maker identify as IEN - 7389

NEED... ELECTRICALLY HEATED PIPE?

STA-WARM heated pipe circulates potting compound, pitches, asphalts, etc., any distance from melting tank and heated pump to point in use . . . without allowing a drop in temperature. Heated pipe helps hot material to flow more freely.

Valves and heated hose may be installed along the pipe line at points of application.

Temperature controlled by thermostats. 110 or 220 V. a-c.

Write today for specifications bulletin.

ALSO, heated gate valves and fittings in sizes from 1" up. Flexible heated hose

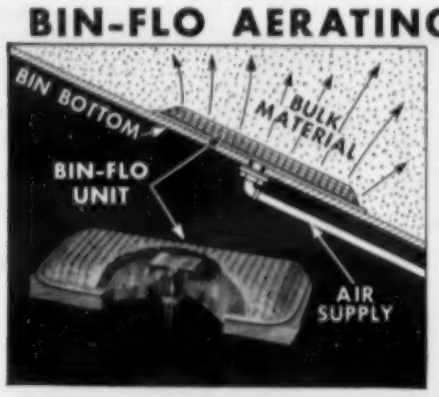
Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 7390

THE JOHNSON CORP., 846 Wood St., THREE RIVERS, MICH.

If you write maker identify as IEN - 7391

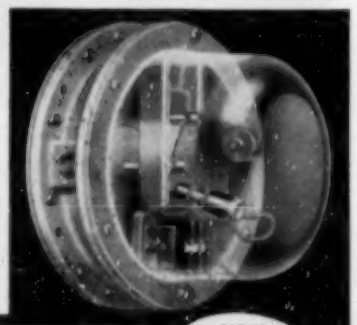
BIN-FLO AERATING UNIT



Provides Steady Flow of Dry, Finely Ground Materials which tend to bridge in storage. Uses only small amount low-pressure air.

BIN-DICATOR BIN LEVEL INDICATOR

For All Bulk Materials



signals change in level; automatically starts and stops filling and emptying equipment.

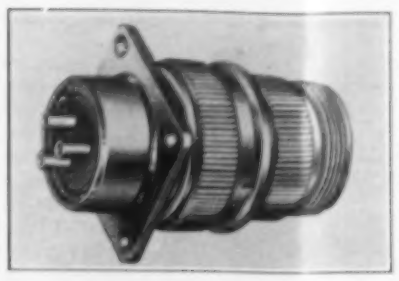
THE BIN-DICATOR CO.
13946-B Kercheval • Detroit 15, Mich.

NEW DETAIL DATA BOOK FREE

If you write maker identify as IEN - 7392

CONNECTOR . . Multi-contact plug and socket for high temperature areas

Source: BENDIX AVIATION CORP.
Dept. IEN, Sidney, N. Y.



For control circuits

Mycalex inserts are cushioned by silicone wafers and are housed in stainless steel shells in this new high temperature electric connector. It has been designed to carry circuits through aircraft fire walls and high temperature areas. It provides a positive fire barrier, for 20 min. or more, and uninterrupted power for at least 5 min. when vibrated during exposure to a direct 2,000 deg. F. flame. A typical application is in protection of propeller control circuits at the aircraft fire wall where vibration as well as heat are factors in equipment performance.

If you write maker identify as IEN - 7393

PAINTING . . Protective coating for surfaces subject to 1,600 deg. F.

Source: SHEFFIELD BRONZE PAINT CO.
17814 Waterloo Road, Dept. IEN, Cleveland 19, Ohio

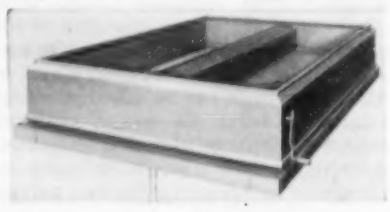
Technical data upon request

Decoration as well as protective coating is added to the metal parts on furnaces, pipes, boilers, ovens, to withstand temperature to 1,600 deg. F., by this new formulation of the Super Hot aluminum paint, previously described IEN-7200-52. The paint becomes permanently bonded to the metal on being subjected to heat. It maintains its bright color. It will not chip, crack or peel. Application is by brushing, spraying or dipping. It air dries in about ½ hr. after which time heat can be applied. The final film is heat resistant, anti-corrosive and weather resistant.

If you write maker identify as IEN - 7394

VENTILATING . . Roof damper releases gas, smoke in event of fire

Source: SWARTWOUT COMPANY
18511 Euclid Ave., Dept. IEN, Cleveland 12, Ohio



Bulletin, "Fire Valve"

Fire Valve is a new rectangular assembly for application in a roof. It mounts two hinged dampers that are held in normally closed position by a fusible link. Increasing temperature, such as that due to a fire, melts the link and permits the dampers to hinge open and release heat, gas, smoke. The dampers also can be opened and closed by a chain, when this is specified, to provide ventilation in good weather. The assembly is weather proof when it is closed. It provides 46 sq. ft. of free area.

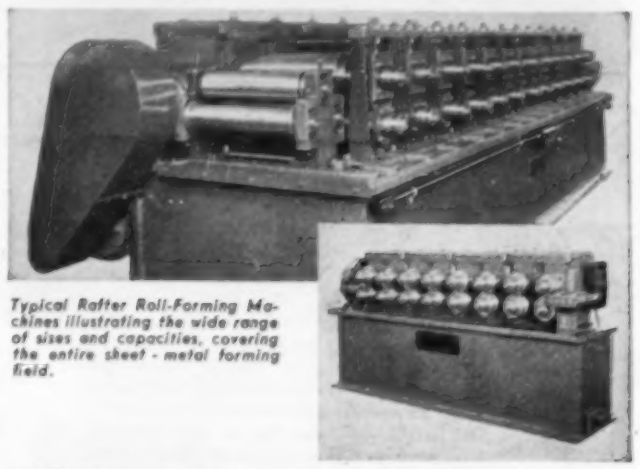
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7395

If you write maker identify as IEN - 7396

RAFTER COLD METAL ROLL-FORMING MACHINES

Correct Design for Maximum Efficiency



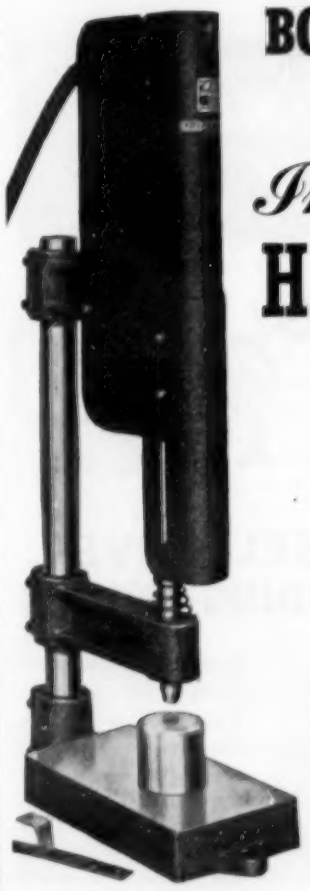
Typical Rafter Roll-Forming Machines illustrating the wide range of sizes and capacities, covering the entire sheet - metal forming field.

Patented balanced gear drive mounted on roller bearings distributes power efficiently to each pair of rolls . . . Gear ratio is a continuous reduction from drive shaft to roll shaft, quiet, efficient and compact. This drive consumes less power than any other type . . . Exclusive design permits greatest vertical adjustment of the upper roll spindles, without the aid of square gearing or small complicated gears . . . Design permits quickest and most accurate change of rolls possible. Shafts always remain parallel. Adjusting screws connect front and rear bearings . . . Low power consumption, lasting accuracy, longer roll life, and higher output are made possible by these and many other features.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street • Belleville 9, N. J.
GANG SLITTERS and PRESS BRAKE DIES

If you write maker identify as IEN - 7397

BOOST OUTPUT with *Impact* AIR HAMMER



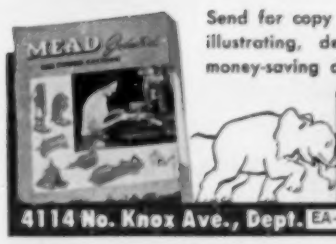
the efficient modern method for

PUNCHING . . . RIVETING
ASSEMBLING . . EMBOSSING
FORGING . . . . . FORMING
PEENING . . . . . MARKING
CRIMPING . . . . . CUTTING
BLANKING . . . . . COINING

Ready . . . Mead's new air-powered Impact Hammer . . . weighing only 27pounds . . . yet having a wallop like a pile-driver! One of its outstanding applications is multiple piercing of large metal sheets before or after forming. It can punch holes as close together as 1¾" on centers. Value of the impact readily adjusted from 4,500 pounds down to only a few ounces. Set ups are quick, easy. Besides, innumerable punching operations, with suitable attachments, it is capable of upsetting rivets, blanking out soft materials with knife dies, light coining, forging operations, etc. Get complete facts on this versatile, handy new tool and other Mead Air Power devices. Write for Catalog.

MEAD AIR OPERATED DEVICES save precious man-hours!

NEW CATALOG READY!



Send for copy of our new Air Power Catalog illustrating, describing many new man-and-money-saving devices.

MEAD SPECIALTIES COMPANY
4114 No. Knox Ave., Dept. EA-74, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 7399

Cut Maintenance Costs with CARBOLOY MASONRY DRILLS

Anchoring machinery

Stringing electrical conduits

Installing plumbing

Get fast, clean, deep holes, at *any* angle, in concrete, asphalt, tile, brick, slate, marble, etc.

Carboloy Masonry Drills won't pack or stall. Rotary-drill *any* masonry continuously to any depth. Superhard Carboloy cemented carbide cutting tips assure long drill life. Available separately, or in job-designed kits. Sizes 3/16" through 1½".

For complete information contact your distributor or write —

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11077 E. 8 Mile Road • Detroit 32, Michigan

"Carboloy" is the registered trademark for products of Carboloy Department of General Electric Company.

If you write maker identify as IEN - 7400

Your LOW COST SOLUTION to PROCESS HEAT problems

Save time and money with economical, easy-to-install CHROMALOX *Electric* UNITS

Only Chromalox gives you a full selection of electric heaters to meet every need. Over 15,000 types, sizes and ratings to choose from, most available from stock—for heating gases, liquids, platens, dies, molds, ovens, soft metals and countless other materials. Chromalox Heaters are easily and inexpensively installed, provide concentrated, controlled heat that is dependable, economical, safe, clean and efficient.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Far-Infrared Adv., Page 5

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 7401

Chip Away... PAINT RUST SCALE

with AURAND CLEANING TOOLS

ELECTRIC or PNEUMATIC

Clean off accumulation of scale, paint, rust or any foreign matter from any hard surface with Aurand Cleaning Tools. Toothed cutting wheels, loose pinioned on rotating head chip away accumulations at high speed. Positive depth shoe prevents cutting inot permanent surface and assures uniform cleaning of entire area.

FOR FULL DETAILS, WRITE DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 0000

YOUR OWN NEW PRODUCTS
Let us know what you have "that's new"

Source: INDUSTRIAL EQUIPMENT NEWS
461 Eighth Ave., New York 1, N. Y.

No obligation on your part

For every new product that reaches an exposition booth, during the season of industrial shows, there probably are hundreds that come quietly on the market and just go to work without benefit of show promotion. We know this is so by comparing the items published in IEN with the show lists of products exhibited. It means of course that your own plants are developing many new things about which no one will know until your salesmen start promoting them to your prospective customers in industry.

There is where you can bring IEN to the attention of your sales and publicity departments. We hope you will tell them that IEN stands ready to describe, without obligation on your part, the new things you are making for industrial application. All we need are the basic facts, a copy of your literature, a suitable illustration and authority from your company to publish the description. We will assemble our story from this information, make the cut for the illustration and publish the description in our next available issue. We will forward the inquiries that come back to us from those of our 64,000 plant readers who ask for information pointing toward purchase.

If you write maker identify as IEN - 7403

TIMING . . Attendance recorder takes regular or accounting cards

Source: INTERNATIONAL BUSINESS MACHINES CORP.
590 Madison Ave., Dept. IEN, New York 22, N. Y.

Tamper proof

Illustrated is new design of the company's electrically operated attendance time recorder into which cards are inserted to trip the mechanism and print the time in 1-min. intervals. The recorder positions the card automatically. It prints on the front face of the card with its steel type wheels.

Additional features, that can be specified, include an external key operated reset, 22-position recording for direct subtraction, an audible time signal built in to indicate starting and stopping times, an additional circuit for audible time signal programming to sound the bells, chimes or horns remote from the recorder, a self-contained signal duration relay and a separate circuit to control ac. indicating clocks.

If you write maker identify as IEN - 7404

Special spray gun, with a two stage external mixing cap, and new materials, consisting of catalyst and resins, have been developed by DeVilbiss Company, 300 Phillips Ave., Dept. IEN, Toledo 1, Ohio, for surface preparation of glass fiber reinforced plastic automobile bodies. The new equipment and materials minimize surface preparation time and open the way to paint the bodies in conventional manner using dark, medium or light colors to meet requirements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7405

Brady ALL-TEMPERATURE Pipe Markers

NEW... STICK TO PIPES 300°F. HOT... -300°F. COLD

It's more efficient, safer, thriftier to mark *what* flows *where*—with Brady self-sticking Pipe Markers. They stick—and *stay stuck* to pipes, at continous temperatures from −300° F. to +300° F. Off dispenser and in a hurry—on the pipe to *stay* and be seen—for real savings in material cost and application time. *Background color and legend-overprint combinations meet A.S.A. Standard A-13.* And Brady Markers are silicone plastic over-coated to stay [illegible], highly visible. Over 1000 stock markers [illegible] we'll make any kind, with any legend, to your exact order! For *free* samples, useful literature—

MANUFACTURERS OF SELF-STICKING INDUSTRIAL PRODUCTS

W. H. BRADY CO.
700 WEST GLENDALE AVE. • MILWAUKEE 12, WIS.

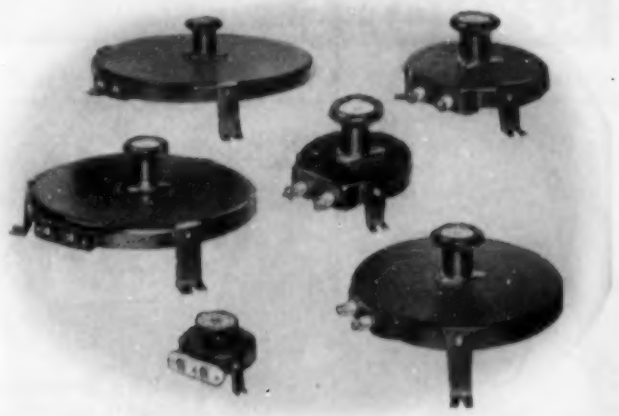
WIRE MARKERS • SPECIAL MARKERS • WRITE ON LABELS • PIPE LINE MARKERS • SAFETY SIGNS • CONTAINER MARKERS • SCOTCHLITE SIGNS • AISLE MARKERS • PRINTED ROLL TAPES • PRE-CUT MASKS • PINSTRIPE STENCILS • FLUID LINE MARKERS

If you write maker identify as IEN - 7406

ADAPTABILITY! **Singly, or in combination, these valves provide 2-way, 3-way or 4-way control. Hand, foot, cam or solenoid operated. Every pipe size from ¼" through 1¼". Write for Bulletin 231.**

HANNIFIN
Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.
AIR and HYDRAULIC CYLINDERS • PRESSES • AIR CONTROL VALVES

If you write maker identify as IEN - 7407



161 control steps!

That's what you get in Ward Leonard's 13" Multi-step plate rheostat — what's more, you get 161 steps whether it's a 2 ohm or a 1000 ohm plate.

You get smoother operation and longer life in any W/L rheostat and you take your pick from the most complete line of power rheostats ever offered for industrial and commercial applications.

Write for free data-packed Bulletin 60A. Ward Leonard Electric Co., 33 South St., Mount Vernon, N.Y. 4.12

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS • RELAYS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as IEN - 7408

Cuts a Permanent Mark Into Any Surface—from Steel to Plastics and Glass

ORDER TODAY
*hardened alloy point
$21.40 with diamond point
F.O.B. Sycamore, Illinois
SEND NO MONEY!
Delivery made through your nearby IDEAL Distributor

Easy to Use as a Pencil!

Dozens of cost-cutting, time-saving uses in every plant. Can be used anywhere, by anyone on any material. Codes, identifies parts, tools, jigs, etc. Cheaper than special plates, better than tags. 7200 cutting strokes a minute, adjustable for depth, make tamper-proof mark that lasts for ever.

IDEAL INDUSTRIES, Inc.
1108 Park Ave., Sycamore, Illinois
Please enter our order for the following IDEAL Electric Markers

Quantity
____ Alloy Point @ $15.95
____ Diamond Point @ $21.40
F.O.B. Sycamore, Illinois

Name____
Company____
Address____
City____ Zone____ State____

If you write maker identify as **IEN - 7409**

di-acro BOX FINGER BRAKE

1. Box and Pan Brake
2. Open End Brake
3. Standard Brake
4. Bar Folder

Form and duplicate a variety of shapes in metal as heavy as 16 gauge—widths up to 24"—with Di-Acro Brakes.

A number of forming jobs can be done with the Di-Acro Box Finger Brake, by simply adjusting or changing the type of mounting bar on contact surface. Di-Acro Standard and Radius Brakes are also available. Ten models.

Write for Free 32-Page Catalog

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
318 8th Ave., Lake City, Minn.

If you write maker identify as **IEN - 7410**

KEYNOTES

"Believe me, a Key Graphite Paste joint wouldn't stick like that!"

The permanent, easy-breaking seal for oil, gasoline, high-pressure steam lines.

Write for FREE sample.

SEALS TIGHT... BREAKS RIGHT!

A Product of KEY COMPANY

2651 McCasland • East St. Louis, Illinois

If you write maker identify as **IEN - 7411**

At an average cost of less than $10 per machine NOW you can REDUCE VIBRATION SIMPLIFY INSTALLATION with **UNISORB**® Mounting Pads

Your first saving with this modern machine installation method is in the cost of the UNISORB mounting pads . . . an average of less than $10. per machine. And savings in first cost are only the start.

Add to that the saving of 10% to 30% in cost of time and labor for installation, plus the advantage of eliminating up to 85% of transmitted machine vibration. Get the facts about installing your lathes, presses, grinders, etc. on UNISORB.

Return the coupon today for your free copy of FACTS ABOUT ANCHORING YOUR MACHINES ON UNISORB.

The **FELTERS** Company
208 South Street, Boston 11, Mass.

Please send my free copy of FACTS ABOUT ANCHORING YOUR MACHINES ON UNISORB.

Name.....Title.....
(Please Print)

Company.....

Address.....

City.....Zone....State.....

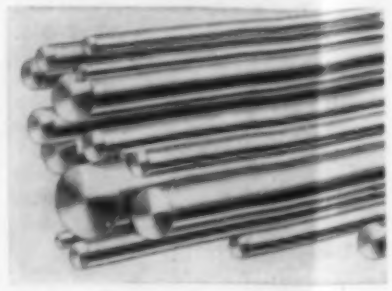
Return to The FELTERS Company
208 South Street, Boston 11, Mass.

TORONTO: A.R. Williams Machinery Co., Ltd.
MONTREAL: Moore Bros. Machinery Co., Ltd.

If you write maker identify as **IEN - 7412**

STEEL . . Free machining bar stock for maintenance and parts replacement

Source: LA SALLE STEEL CO.
Box 6800-A, Dept. IEN, Chicago 80, Ill.



Carried in stock

The company announces availability of its Stressproof steel bar stock through steel warehouses for maintenance and parts replacement as well as for production application. The steel is suited for all-purpose maintenance. It can be employed to replace practically any alloy or heat treated carbon steel bar. It presents no machining problems. The steel is available in rounds from ⅜ to 3¼ in. and in hexagons from ⅜ to 2 inches.

If you write maker identify as **IEN - 7413**

PAINTING . . Glazing material prepares castings for final painting

Source: EGYPTIAN LACQUER MFG. COMPANY
Box 444, Dept. IEN, Newark 1, N. J.

Detail procedure upon request

Number 700 is a new material, to be thinned by reducing liquid, for spray or brush application over an initial coating of primer. The company's Gray 1-PR primer is recommended. Spraying or brushing is followed by spot glazing deep places on the metal surface, using the material without any reduction and applying it with a knife or squeegee.

This operation follows the spraying by at least a ½-hr. interval. Then, following an additional four hours to permit drying, the surface is sanded in preparation for application of the final lacquer enamel top coat. The material is employed when a particularly pleasing finish is required on castings or on completed machines.

If you write maker identify as **IEN - 7414**

SPREADING . . Dispenser cart to cover a floor with oil absorbent

Source: DICO COMPANY
200 S. W. 16th St., Dept. IEN, Des Moines 5, Iowa

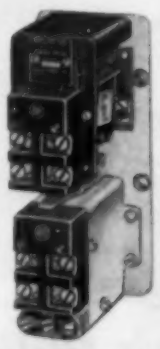
Made of steel

Granular material, to absorb oil and grease, can be spread evenly over a floor with this new combination utility cart and spreader. It is equipped with solid rubber tired wheels and was originally introduced in the general consumer market. It has been found practical for factories and garages where it can be employed to spread the absorbent and also to carry work in process, after inserting a guard plate over the spreader agitator.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7415**

Reliable Pneumatic Timers for Your Control Needs



VERTICAL CONSTRUCTION

HORIZONTAL CONSTRUCTION

The Bulletin 849 Timing Relay can be supplied to provide time delay in either of two ways: "ON-DELAY" or "OFF-DELAY." It has a range of ¼ to 180 seconds, with an accuracy of approximately ± 10%. A-c or d-c operation. Write for Bulletin.

Allen-Bradley Co.
1312 S. Second St.
Milwaukee 4, Wis.

ALLEN-BRADLEY
MOTOR CONTROL

If you write maker identify as **IEN - 7416**

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE7.

L. B. FOSTER CO.
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as **IEN - 7417**

LIKE AN

ATOMIC

EXPLOSION

JUST 1/32" FAUCET LEAK MUSHROOMS INTO ATOMIC WASTE OF APPROXIMATELY

95,000

GALLONS OF WATER YEARLY!

Cost of wasted water @ $1.90 per M. cu. feet is $24.14. If the leak is in a hot water faucet then fuel cost for heating this wasted water will be: $88.91 if coal (9,879 lbs.)†; $91.02 if oil (798 gals.)†; $84.41 if gas (84,411 cu. ft.)†. These figures authenticated Hackensack Water Co.* and American Gas Association†.*

you can stop this needless waste now with Pat'd

'SEXAUER' "EASY-TITE" Faucet Washers

THE ONLY WASHERS BUILT LIKE A TIRE WITH FIBERGLAS RE-ENFORCEMENT

Fiberglas, with a melting point 1200° Fahrenheit, is unaffected by destructive heat of modern superheat water systems; has a tensile strength of 460 pounds per square inch; is non-absorbent and resists all chemicals.

'Sexauer' "Easy-Tites" outwear ordinary washers 6 to 1!
. . . Now available with a greatly improved special duPont COMPOUND which adds substantially to longer, trouble-free washer service. This COMPOUND keeps washer from going to pieces under extreme hot water, withstands impurities and has superior tensile strength. 'Sexauer' "Easy-Tites" won't spread, split or "mush-out." They outlast all other washers by 6 to 1; save labor on 5 REPEAT REPAIRS, water and fuel and prolong fixture life.

Send for your

Free Catalog!

For water savings, lower maintenance and fuel costs, write for new Edition H. 'Sexauer' "Easy-Tite" washers just one in over 3,000 TRIPLE WEAR plumbing repair parts and tools. It's today's accepted guide for purchasing and maintenance men in thousands of PLANTS, INSTITUTIONS, AND GOVERNMENT AGENCIES that rely on 'Sexauer' repair materials.

'Sexauer' Maintenance Engineer at your service

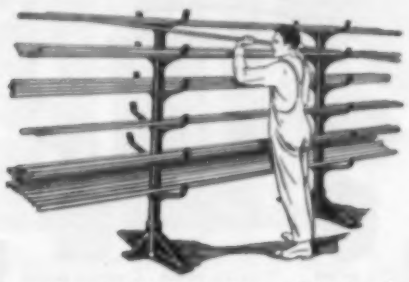
There's a 'SEXAUER' TECHNICIAN within your quick call who offers a special SURVEY SERVICE that sets up schedule of exact replacement parts for your plumbing regardless of make or age. A postcard will bring him and your NEW catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K74
2503-05 Third Avenue, New York 51 *as advertised in THE SATURDAY EVENING POST*

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS.

If you write maker identify as IEN - 7419

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 7420

securityflex* saves money...

and because of its strength, toughness, and wear-resistant properties, this heavy-duty portable cord needs fewer replacements—lowers maintenance costs. 52425

*Trademark

Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.

the right cable for the job

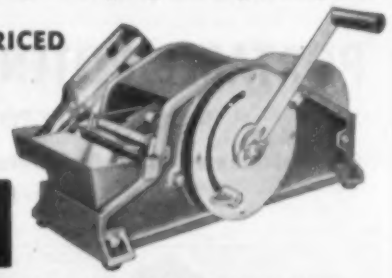
ANACONDA® wire and cable

If you write maker identify as IEN - 7421

Another Triumph of Derby's Designing and Engineering Skill!

THE MEDIUM PRICED

Super **DERBY "152"**



SENSATIONAL DISPENSER DELIVERS PREDETERMINED LENGTHS OF GUMMED TAPE UP TO 30", (1" TO 3" WIDE)

Priced far lower than any machine of comparable quality now on the market, the new Derby "152" has amazing versatility and durability. Its exclusive Derby "Moisture Control System" provides a completely moistened tape every time—and its unique brush design makes unnecessary the usual two brush arrangement. For industrial packaging, specify Derby "152".

A DERBY FIRST
Stainless steel cut-off blade, guaranteed for life of machine.

LOOK AT THESE QUALITY DERBY FEATURES

- Exclusive spring clutch feed
- Visible auxiliary water reservoir
- Adjustable, vari-length handle
- Larger interlocking side frame construction
- Measuring feed stop
- Automatic tape cut-off
- Visual measuring scale
- Water heater available at extra cost

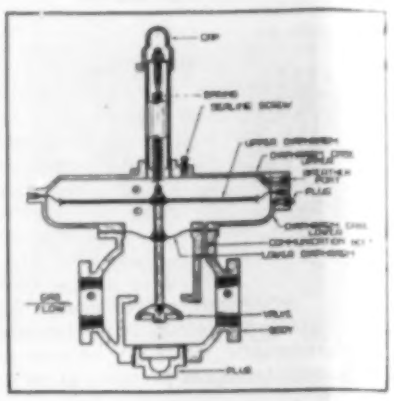
See your dealer or write

DERBY SEALERS INC. Derby, Conn.

If you write maker identify as IEN - 7422

VALVE . . Diaphragm operated to regulate low pressure gas and air

Source: PAULSEN-JOHNSON COMPANY
1647 Eddy Road, Dept. IEN, Cleveland 12, Ohio



Catalog on request

Illustrated is a new demand type ¾-in. low pressure unit in the company's line of zero-pressure regulators. The new valve will handle 600 cfh. of 0.6 specific gravity gas at 4 in. of water column pressure drop. It will control the flow within 0.05 in. of water column over its operating range.

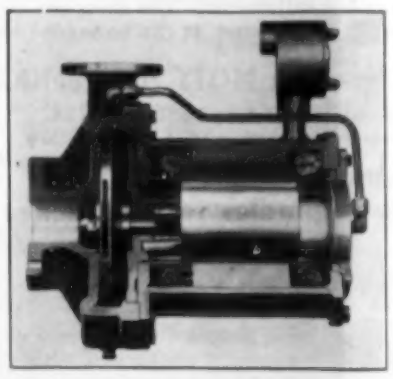
The valve is suited for straight suction service on heating installations equipped with aspirating mixers. It can be used on cross connected installations as a proportioning device in which gas pressures are balanced against each other and varying proportions are established through metering orifices in each line. It can be employed wherever low air pressure must be maintained, as in aircraft pressurized cabins.

A compensator to eliminate inherent inaccuracies can be assembled internally or supplied for remote installation. The complete line now includes assemblies in seven pressure drop ranges between 4 in. and 5 pounds. Sizes are ¾ to 3 inches. Capacities are 1 to 10,000 cubic feet per hour. Each is fitted with a soft seat for positive shutoff.

If you write maker identify as IEN - 7423

PUMP . . Motor driven centrifugal for corrosive, expensive, toxic fluids

Source: CHEMPUMP CORPORATION
1300 E. Mermaid Lane, Dept. IEN, Philadelphia 18, Pa.



Prices start at $96

Sizes range from ⅛ to 3 hp. with capacity to 180 gpm. and construction in iron, stainless steel or Monel Metal for this new integral assembly of motor and centrifugal pump. The unit illustrated represents improved design of the assembly previously described IEN-8477-53. O-rings have been eliminated. The construction permits taking the pump apart and re-assembling it in the field with no danger of losing its leak-proof characteristics.

The design is characterized by the hermetically sealed motor rotor and the cylinder that is installed in the gap between the rotor and stator. This cylinder seals the stator, permits part of the fluid being pumped to circulate through the space occupied by the rotor. This fluid serves to lubricate the bearings. Motor and impeller can be withdrawn through the stator housing so the pump connections need not be disturbed.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7424

GREATEST DEVELOPMENT IN WORK GLOVE HISTORY

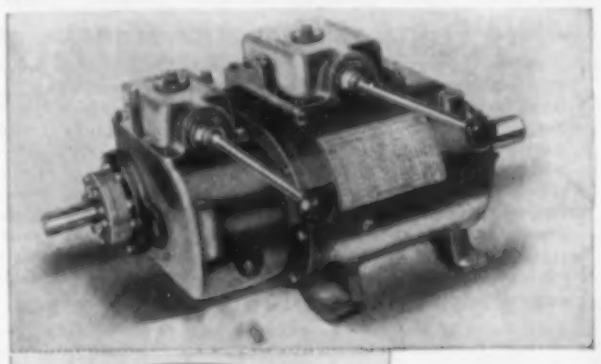
The same heavy cowhide side split used in work gloves now tanned to a softness never before achieved.

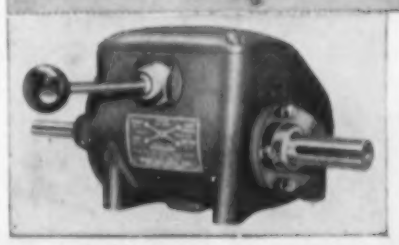
If you write maker identify as IEN - 7425

WESTERN "SUPER" *with* 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. Capacity 50 H.P.

In geometric progression of 1.29 (total reduction of 6:1)





(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever automotive type.

Ratios — 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.

up to 100 h. p. For Metalworking Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Reamers, Bolt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS

WESTERN MANUFACTURING CO., 5455 BUCKEYE—DETROIT, MICHIGAN

If you write maker identify as IEN - 7426

Dotted line proves YALE leads the way†

with safety features you've never seen before on *any* fork lift truck!

DRIVER'S SEAT and floor clear on both sides. Operator can quickly get out either side.

LOWER COWL provides improved visibility, removes dangerous blind spots, facilitates operation.

HANDLES HEAVY LOADS. Available in 2000 and 3000 lb. capacities at 24 inch load center.

PLUS other Yale advantages. Narrow 32½ inch Truck width, centralized "fingertip" controls, easily mounted interchangeable attachments.

*Reg. U. S. Pat. Off.

† The dotted line shows why there's no safer truck than the new Yale *Safety Silhouette.*

Now, even when your operator sits erect, his head is lower than the Truck's overall height. He'll never have to crouch or duck in low headroom areas. And, the lowered seat enables him to work faster and more efficiently.

Mail coupon for full details on this new Yale Truck which offers dependable, trouble-free operation... plus greater safety than ever before.

YALE®
INDUSTRIAL LIFT TRUCKS AND HOISTS

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 367
Roosevelt Boulevard, Philadelphia 15, Penna.

Yes, please send me full details on the new Yale Safety Silhouette Electric Truck.

Company_____
Name_____ Title_____
Street_____ City_____ State_____

In Canada write: The Yale & Towne Manufacturing Co., St. Catharines, Ontario, Canada.

Gas, Electric, Diesel & LP-Gas Industrial Trucks
Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

If you write maker identify as IEN - 7428

Rolling Steel Doors

More Practical from Any Standpoint!

No matter how you look at it, no other type of door meets present day requirements as fully as a good power operated Rolling Steel Door. For motor freight loading docks, and other truck and railroad openings in industrial and commercial buildings, these quick opening, quick closing Rolling Steel Doors offer more desirable features than any other type of door. Their vertical roll-up action saves valuable space—there are no overhead tracks or other obstructions to interfere with crane handling adjacent to door openings. All metal construction of Rolling Steel Doors provides permanence, greater protection against intrusion and fire, and it assures you a lifetime of trouble-free service. For information write for Catalog No. G-54.

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 7429

WEBB TOWVEYOR*

for FASTER, SAFER & EASIER MATERIALS HANDLING

FASTER travel from loading to unloading stations—trucks are delivered to proper destination without wasted traveling time.

EASIER handling—trucks engage Towveyor chain by lowering tow pin and are disengaged at any point by raising of tow pin.

SAFER floors—Towveyor eliminates overhead chains and supports and employees can safely walk or truck over any portion of the system.

Cut your costs with a Towveyor system that will efficiently speed up your materials handling.

*Towveyor is a registered trademark identifying floor truck conveyors patented, manufactured and installed by the Jervis B. Webb Company.

JERVIS B. WEBB CO.

Conveyor Engineers and Manufacturers

8915 ALPINE AVE. • DETROIT 4, MICH.

OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN - 7430

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.

DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.

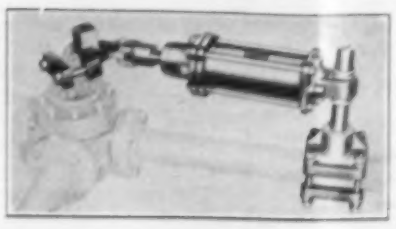
401 Main Street

ANN ARBOR, MICH.

If you write maker identify as IEN - 7431

VALVES . . Power operator employs cylinder to turn cock plug

Source: HANNA ENGINEERING WORKS
1748 Elston Ave., Dept. IEN, Chicago 22, Ill.



Bulletin 300

Plug valves, or cocks, can be opened and closed by air, oil, water or petroleum gas pressure by means of this new assembly of valve lever, clevis, power cylinder and pipe bracket. Five standard sizes operate valves measuring 1 to 12 inches. The cock is rotated approximately 90 degrees. Control can be manual, semi-automatic, automatic or remote in desired combinations. The cylinder takes pressure at 50 to 150 pounds.

If you write maker identify as IEN - 7432

INSULATING . . Laminated sheet for use in electrical equipment parts

Source: RICHARDSON COMPANY
27th Ave. & Lake St., Dept. IEN, Melrose Park, Ill.

Technical data upon request

Insurok XT-200 is a new high pressure glass laminated sheet stock impregnated with thermosetting polyester resin. The material is designed primarily as an insulating sheet. It has excellent structural properties and high arc resistance. The sheet can be employed at elevated temperatures, higher than paper or canvas based phenolic laminates. It is priced between canvas or linen base laminates and paper base laminated materials.

Manufacture is in sheets measuring 34 by 34 in. and in thickness measuring 1/16, 1/8 and 1/4 inch. Shearing and handling qualities are superior to those of mica glass materials. Machining characteristics are satisfactory. The sheet can be punched cold to produce intricate shapes. It can be sanded to close tolerances.

If you write maker identify as IEN - 7433

LATHES . . Pneumatic collet closer for hollow spindles to 1 3/8 inches

Source: I. W. ADAMS & ASSOCIATES
4200 Burbank Blvd., Dept. IEN, Burbank, Calif.

Assists production

Air pressure is employed on a piston in connection with a cam and dog to open and close internal or external collets with maximum bar stock capacity to 1 in. with this new collet closer. Draw bar pull can be adjusted to 5,000 lb. by setting a manual adjustment. The closer can be employed on Atlas, Clausing, Hardinge, Logan, Sebastian, Sheldon and South Bend lathes. It is suited for spindle speed to 4,500 rpm. It calls for 3 cu. in. of compressed air per cycle. Air pressure ranges between 80 and 150 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7434

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from 1/4" to 2" and cap screws from 1/4" to 1 1/4", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for 1/4" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to **Mathewson Machine Works**, 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN - 7435

CESCO *RIGHT... before your Eyes!*

Assemble Your Own Combinations

Items A, B and C can be used with either items 1 or 2 illustrated above so you can make six different combinations. The old-fashioned way you would buy a helmet and headgear, a shield and headgear, and so on until you had six combinations (twelve items) to do the same thing these five separate pieces will do.

Save buying extra parts... save money. On your next order specify CESCO interchangeable helmets and face shields.

They're—*"Right... before your Eyes."*

Send TODAY for CESCO literature

CHICAGO EYE SHIELD COMPANY - 2326 Warren Boulevard, Chicago 12, Illinois

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, Detroit, East Orange, Houston, Indianapolis, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City D. F., Milwaukee, Montreal, Peoria, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa, Wichita

If you write maker identify as IEN - 7436

BRADY Wire Markers stick to your finger from Card to Wire

You *can't drop* a Brady Wire Marker! It *sticks to your finger* until you put it on the wire, then sticks-quick and permanently.

Brady's superior adhesive is not affected by contact with fingers. And there's no cumbersome, skin-cutting tab to get rid of.

Self-sticking Brady Wire Markers are silicone-coated to resist dirt, grease, grime. Over 1,000 different markers in stock. Specials made to order. Write for FREE SAMPLES today!

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · AISLE MARKERS · MASKS & STENCILS · PRINTED ROLL-TAPES

MANUFACTURERS OF SELF-STICKING PRODUCTS

W. H. BRADY COMPANY

745 W. Glendale Ave., Milwaukee 12, Wisconsin

If you write maker identify as IEN - 7437

PORTABLE POTENTIOMETER

MODEL 9A *PYROTEST*

Chromel-Alumel, Iron Constantan, Pt 10% Rh-Pt, Pt 13% Rh-Pt, Millivolts 0-53

Five Range Selector Switch

•

Sensitivity 10 Microvolts

•

Accuracy 1/6 of 1%

Sales Price • $297.75

WRITE FOR DESCRIPTIVE LITERATURE

TECHNIQUE ASSOCIATES

Mass. & Parker Ave

INDIANAPOLIS 18, INDIANA

If you write maker identify as IEN - 7438

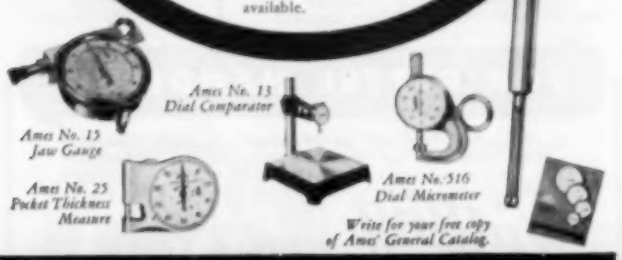
AMES

...the Preferred **Small Hole Gauge No. 36**

Skilled and unskilled employees can use this superbly designed two-point contact gauge to make quick, accurate, *impersonal* inspections of small holes for size, taper and roundness.

The spherical contact point automatically centers itself and indicates the true diameter at the point measured.

The Ames Small Hole Gauge No. 36 checks holes with 3/16" to 1" diameter, up to 2" deep. Longer lengths and special contacts to check irregular recesses, splines, available.



Write for your free copy of Ames' General Catalog.

Representatives in principal cities. B. C. AMES CO. *33 Ames Street Waltham 54, Mass.*

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 7439

Better rubber products are made with Du Pont NEOPRENE

Neoprene-jacketed wiring is still intact after six years' exposure to moisture, heat and chemicals

Wiring at the "wet end" of any paper mill is subjected to proving-ground conditions—and the case of North Carolina's Ecusta Paper Corp. is typical. Here, hot steamy air and exposure to chlorine, caustic soda and other chemicals cut the service life of Type RW wiring jacketed with saturated cotton braid to five years.

Then Ecusta tried wiring jacketed with Du Pont neoprene, and failures became practically unknown. The rugged neoprene covering resists deterioration so well that the wiring is still in excellent condition after *six years' service!* Daily hosings haven't damaged it . . . long exposure to heat has caused no cracking or softening. Ecusta expects many more years of trouble-free performance—and now uses neoprene-protected wiring exclusively in all "wet locations."

Adding years to the life of electric wiring is just one of the many ways neoprene is helping industry cut maintenance and replacement costs. Other rubber products . . . such as hose, belting, gloves, and gaskets, when made of neoprene...make possible similar savings. Although Du Pont makes no finished goods of neoprene, your rubber goods supplier will be glad to give you complete details about the neoprene products he sells.

FREE! THE NEOPRENE NOTEBOOK

Each issue describes new neoprene products . . . improved old products . . . tips on reducing maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Div. IE-7, Wilmington 98, Delaware.

NEOPRENE

The rubber made by Du Pont since 1932

DU PONT

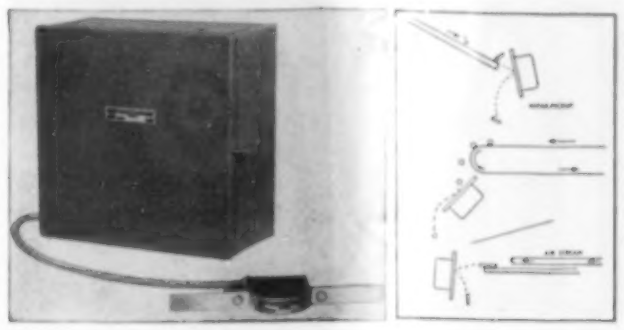
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

If you write maker identify as IEN - 7441

COUNTING . . Impact actuator and amplifier operate electric counter

Source: AUTOTRON COMPANY
Box 722-C, Dept. IEN, Danville, Ill.



Diagramed in Bulletin 11

Work pieces sliding from the end of a chute, falling from a conveyor, blown from a die, serve as the actuating means for the company's new Impak-Switch for work counting and equipment protecting purposes. The switch consists of an impact sensitive element and an electronic amplifier with a built-in relay. It is available with sensitivity sufficiently high so a work piece measuring 0.1 oz. falling 2 in. is sufficient for actuation.

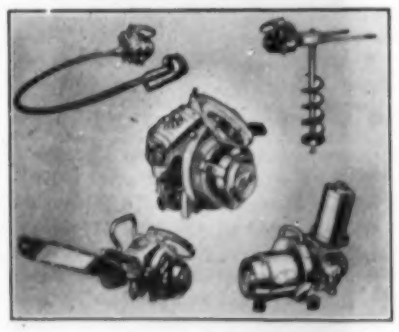
The switch can be supplied for single contact operation or to compensate for repeated contacts in order to prevent incorrect operation. The output circuit from the amplifier is employed to operate one of the company's standard electric counters or to limit the movements of a machine so repeat operation is impossible, as in a press, unless a finished work piece actually has been removed and strikes the switch to signal that the dies are clear.

Two types of pickup list at $30 and $37.50. Three types of amplifier assembly range from $60 to $145. The pickup unit mounts a work contact plate measuring 3 by 3 in. with a mounting frame that is 9 in. in overall length and ⅞ in. in width. A soft neoprene bushing is employed between the impact head, or plate, and the mounting bracket to isolate the plate from normal machine vibrations.

If you write maker identify as IEN - 7442

CONSTRUCTION . . Gasoline engine takes interchangeable attachment units

Source: MALL TOOL CO.
7740 S. Chicago Ave., Dept. IEN, Chicago 19, Ill.



Typical assemblies

The company announces availability of attachments to generate current, vibrate concrete, bore holes, pump water, fell trees, drill fence post holes, cut brush, mow weeds, each for application on the portable gasoline engine originally applied as a part of its chain saw assembly. The generator rates 1,500 watts. The line includes 12 attachments, each of which can be applied or removed by the operator in the field.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7443

NEW Stanflex

PIONEER

Plastic-Coated WORK GLOVES

With Custom-Fit Single-Seam Jersey Lining

PIONEER'S exclusive two-piece, single-seam lining (Pat. pend.) provides over 47 square inches of seam-free work surface. No seams on face of fingers, thumb, palm or back to chafe hands, wear out first. Elastic-knit jersey shapes to hand.

Wing-style thumb, curved fingers fit hand naturally, complete action freedom. Satin finish gives positive over-all grip.

Tough bonded vinyl coating has amazing resistance to cuts, snags, abrasion—outwears leather. Watertight, resists oils, acids, caustics, most chemicals.

Available in 12" gauntlet, 10" band top and knit wrist styles. Try them once—you'll make them your standard.

Bet You 6 Pairs . . .

Send us your order for 6 pairs any style Stanflex Gloves. They will outwear any plastic-coated glove you are now using, or simply return form enclosed for full refund. Order now . . . offer expires in 30 days.

The PIONEER Rubber Co. 235 Tiffin Road Willard, Ohio

Quality Gloves for 35 Years

If you write maker identify as IEN - 7444

THE ONLY SAFETY SWITCH IN SPECIAL INDUSTRY ENCLOSURE!

NOW- NEMA Type XII

• This new heavy duty switch, built to NEMA XII specifications, is "tailor-made" for applications requiring protection from dirt, dust, oil and coolant.

Write for Bulletin SD-5. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 7445

NEW IMPROVED HAND SCRAPERS

with just the correct spring

and other features never before incorporated in any hand scraper

This new Hand Scraper, Model No. 5, is the most improved tool of its kind ever produced. Light in weight, easier to use with palm fitting comfort grip, faster cutting. Rubber handle swivel pad, at small extra cost, for those who place scraper handle against body for extra leverage. Three sizes: 18"—20"—22" long. Furnished with high speed steel or Carboloy Blades. Cost less than home made scrapers.

Anderson BROS MFG. CO.

Write for Bulletin No. 7-35.

ANDERSON BROS. MFG. CO., ROCKFORD, ILL.

If you write maker identify as IEN - 7446

write for this 128-page manual

RUBBER-INSULATED *high voltage* **POWER CABLE**

up to 35,000 volts

If you are joining the trend to high voltage distribution in your plant, you'll want this valuable reference book. It's your complete guide to shielded high voltage, rubber-insulated cable design, including installation, splicing and terminating techniques. Write for Bulletin IE-1075 to The Okonite Company, Passaic, New Jersey.

OKONITE *insulated cables*

2194

If you write maker identify as **IEN - 7447**

Specify Eastman
HYDRAULIC HOSE ASSEMBLIES

● Profit from Eastman's 26 years' experience in Hydraulic Hose Assemblies. Pressed-on, re-usable and renewable couplings and insert type fittings for high and low pressure air, gas, water, paint, grease and hydraulic hose...from 1/8" to 2". Pressure lines up to 5000 psi. Also suction and low pressure units.

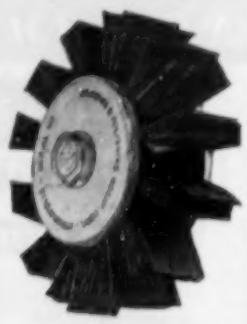
WRITE FOR COMPLETE CATALOG OR PHONE YOUR SPECIFICATIONS

EASTMAN MANUFACTURING CO.
Since 1914
Dept. IEN-7 • Manitowoc, Wisconsin

Eastman *first in the field*
HYDRAULIC HOSE ASSEMBLIES

If you write maker identify as **IEN - 7448**

NEW VONNEGUT POLISHING HEAD WEIGHS JUST TWO POUNDS



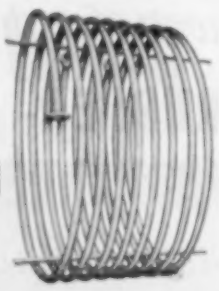
FITS MOST ANY POWER TOOL

Now—a truly "bantam weight" Vonnegut Polishing Head for polishing curved and formed surfaces. (An excellent deburring tool also.) Its small, 6½" diameter lets it get into concave areas of smaller radii that can not be reached with the 16 and 32 brush head. The twelve strips of abrasive—each only 1½" wide—and the smaller diameter requires less power, permitting use of smaller portable tools than needed for the larger heads. The combination—lighter head and tools—makes it ideal for sustained portable operations. Write for details.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D Winthrop Avenue, Indianapolis 5, Indiana

If you write maker identify as **IEN - 7449**

How to S-T-R-E-T-C-H Coil Life in H_2SO_4



. . . and other strong corrosives

...Switch to *Carpenter* Stainless No. 20 Cb!

• Service life was DOUBLED . . . maintenance costs reduced to almost zero by making 7-foot coils for dyestuff process out of this super corrosion-resistant stainless.

Carpenter Stainless No. 20 Cb offers extraordinary resistance to H_2SO_4 in various concentrations, and free sulphate ions, at temperatures up to boiling. It is completely resistant to a long list of other strong corrodents such as arsenic, benzoic, carbonic, citric, picric, and mixed acids; acid-zinc solutions, and acetate solvents.

Send for FREE TEST SAMPLES to compare No. 20 Cb with other materials in your conditions. Ask for bulletin containing corrosion resistance, properties, performance results, applications, and fabricating data. For quick information on tubing, pipe, sheet and plate of Stainless No. 20 Cb, write, phone or wire . . .

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, New Jersey

If you write maker identify as **IEN - 7450**

CUTTING . . Ground steel bits in 12 sizes, 3/16 to 1¼ inches

Source: ARMSTRONG BROS. TOOL CO.
5200 W. Armstrong Ave., Dept. IEN, Chicago 30, Ill.

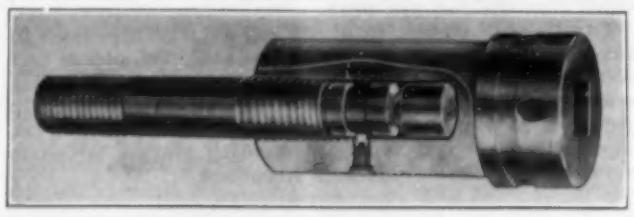
Packaged for convenient handling

High speed and cobalt tool bits, both with ground finish, have been added to the company's previously listed lines of unground tool bits and blades. Both types are accurately ground on four sides with ends beveled at 10 degrees. Both are available in 12 square section sizes from 3/16 to 1¼ inches.

If you write maker identify as **IEN - 7451**

WRENCH . . Stud driver for use in heavy equipment assembly

Source: TITAN TOOL CO.
Main St., Dept. IEN, Fairview, Erie Co., Pa.



Applies with an impact wrench

Bull-Dog trade names this new loose-pressure-plunger stud driver. It is available in a range of sizes for studs from ¼ to 3 in. in diameter. It is regularly supplied with a square driving socket in the rear end measuring ½ to 1½ inches. Morse taper and hexagon slip chucks can be supplied to specification. Special shanks also are subject to order. The loose plunger releases readily from driving position when the driver is reversed so it will come off the stud without drag.

If you write maker identify as **IEN - 7452**

New industrial possibilities are being sought by Minnesota Mining & Mfg. Co., 900 Fauquier St., Dept. IEN, St. Paul 6, Minn., for its paper like material Mistion. It is a filmy, feather weight non-woven material composed of millions of tightly compressed synthetic fibers. It is neither paper nor cloth but has many of their characteristic properties. It can be silk screen processed and plate printed. It can be washed and ironed with a cool iron. It can be heat sealed to itself or to other thermoplastics. It can be secured with adhesives or pressure-sensitive tapes. It can be cut with a scissors. It is available in roll form in any length with width to 54 in. and in 22 solid or pastel colors. Sample swatches are available on request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7453**

T *is for* TOUGH!

the NEW *Mc Donald* SAFE-T-CAP

World's lightest—weighs only 9 oz. Flared to protect ears. Instantly adjustable. Same rugged features as "T" hat.

THE *Mc Donald* SAFE-T-HAT

World's most famous—tops in safety. Weighs only 11¾ oz. Cool, comfortable, easily adjusted to any head size. Radiating ribs deflect rather than absorb blows.

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as **IEN - 7454**

FOR BETTER HANDLING

Look under "Trucks" or "Casters" in your classified phone directory for your nearest Nutting representative. Or write direct for Junior Catalog 54G.

SINCE 1891 **Nutting TRUCK & CASTER CO.**
2015 Division St. Faribault, Minn.
Export Sales Representative School International Inc.
4237 North Lincoln Avenue • Chicago 18, Ill.

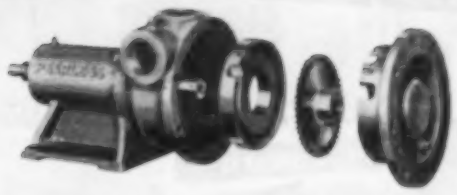
If you write maker identify as **IEN - 7455**

THE TORRINGTON COMPANY
Specialties Division
900 Field Street, Torrington, Conn.

TORRINGTON SPECIAL METAL PARTS

Makers of Torrington Needle Bearings

If you write maker identify as IEN - 7457



EXPLODED VIEW shows easy accessibility to one moving part—the free-running impeller

Request Bulletin No. B-2205 for complete description and pump selection charts

VANE TYPE TURBINE PUMPS

FOR BOILER FEED & LP GAS TRANSFER

Face-Mount and Flexible-Coupled Types

For pumping hot and cold, clear and vaporous liquids. Standard and self-priming models for pumping capacities up to 58 gpm and against heads up to 800 ft. Used for liquid circulating, transfer and boosting, boiler feed and condensate return service. Easy and economical to apply, operate & maintain.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
301 West Avenue 26
Los Angeles 31, California

PEERLESS PUMPS

New York; Indianapolis; Chicago; St. Louis; Atlanta; Dallas, Plainview and Lubbock, Texas; Los Angeles, Fresno, Calif.; Phoenix; Albuquerque, New Mexico.

If you write maker identify as IEN - 7458

MERRILL MATERIALS HANDLING DEVICES

MERRILL BROTHERS
56-14 ARNOLD AVENUE
MASPETH, N. Y.

If you write maker identify as IEN - 7460

TRUCK . . Engine driven fork lift rates 1½ ton, has hydraulic coupling

Source: LAMSON MOBILIFT CORP.
1604 S. W. 10th Ave., Dept. IEN, Portland 1, Ore.

No gears to shift

Gyrol fluid coupling, the company's multiple disc oil immersed clutch, a constant mesh transmission and a differential connect the drive wheels on this new Type M-324 truck to its four-cylinder Hercules gasoline engine. The operator selects forward or reverse by moving one lever. He selects a high range or a low range of travel speed by moving a second lever. There is no clutch pedal or gears to shift. The operator rides in seated position back of the steering wheel and can get on or off from either side.

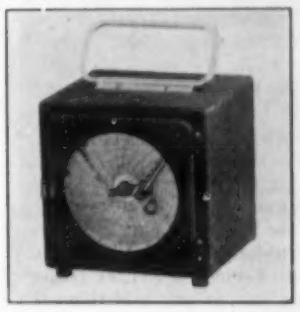
Wheel base measures 42 in. and overall length, without the forks, is about 73 inches. Turning radius is 72 inches. Standard mast height is 83 inches. Maximum lift height is 128 in. with free lift to 64 inches. A special 68-in. overall height can be specified to operate the truck in areas where head clearance is low. Floor and toe boards are in sections for quick removal.

An equalizer, known as the Hydra-Lizer, is mounted on the rear wheels to hold the truck steady when a wheel passes over a bump or sinks into a depression. Equipment includes hydraulic service brakes, a hand-operated parking brake and a foam rubber seat for the operator.

If you write maker identify as IEN - 7461

METER . . Portable instrument records current, voltage against time

Source: WESTON ELECTRICAL INSTRUMENT CORP.
614 Frelinghuysen Ave., Dept. IEN, Newark 5, N. J.



Circular P-8-A

A spring wound clock drives the 4-in. circular chart in this new instrument for one rotation in 24 hr. or in 7 days as specified. The clock winding key is secured on the chart spindle for safe keeping, as shown in the illustration. The pen, back of the window in the hinged front door, makes an ink trace on paper to read voltage or current as specified. The portable unit measures 6¼ by 7 by 6¾ inches. It weighs 7½ pounds. Mounting feet are provided.

Model 6401, for dc. readings, is available in ranges from 1 milliampere to 5 amp. and from 100 millivolts to 300 volts. Higher ranges can be obtained through the use of accessory shunts or multipliers. List price ranges from $150 to $185.

Model 6402, for ac. measurements, is available in ranges to 5 amp. and to 300 volts. Higher voltage ranges can be obtained through the use of external multipliers and higher current ranges by employing a Model-604 Type-1 current transformer. This instrument lists at $195 to $215.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7462

SPEEDY AIR VISE

SPEEDS UP
✓ MILLING ✓ PUNCHING
✓ DRILLING ✓ BENDING
✓ TAPPING ✓ RIVETING

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce more! Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings . . . only **$36.00**

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Avenue, Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN - 7463

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 7464

The Case of the "SNUG BUGS"

Solved by WATLOW ELECTRIC HEAT

The Case:

Certain bacteria (the anaerobes) cannot exist in free oxygen. Because they are useful in research, they are cultivated in a Brewer Anaerobic Jar which makes use of hydrogen or illuminating gas to eliminate free oxygen.

The Solution:

Watlow designed a special cartridge unit sealed in a ⅜" brass tube with a pipe thread and male plug, operating at 115v, 25w, and measuring 5" overall. When heated, it activates a platinized catalyst which causes the hydrogen to combine with the free oxygen to form water. The "bugs" are then free to live and reproduce in warm, comfortable "no-oxygen" surroundings.

Watlow solves unusual electric heating problems every day. What is your heating problem?

WATLOW ELECTRIC MFG. CO.
Since 1922 — Designers and Manufacturers of Electric Heating Units
1370 FERGUSON AVE.
SAINT LOUIS 14, MO.

If you write maker identify as IEN - 7465

you save 50% in TANK HEATING and COOLING with PLATECOIL
(REPLACE PIPE COILS)

★ You SAVE 50% in tank SPACE
★ You SAVE up to 50% in initial COST
★ You have 50% LESS WEIGHT to handle
★ You SAVE 50% in maintenance LABOR as plates are changed from outside the tank without dumping solution

. . . besides all these you get faster heating or cooling. Take advantage of the engineering assistance offered by Kold-Hold to help you with your heat transfer problems.

Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL
Division
Tranter Mfg. Inc.
LANSING 4, MICHIGAN

If you write maker identify as **IEN - 7466**

MARSHALLTOWN

Capacities from 18 Gauge to ½"
Cuts any SIZE . . . any SHAPE

America's finest for every cutting job—straight, irregular or circular patterns.
Speedy—up to 6 ft. per minute. Efficient, easy to operate.
Built for extra heavy duty use. High grade tool steel cutters.

Write today for details and prices.

MARSHALLTOWN MFG. CO., Marshalltown 1, Iowa

If you write maker identify as **IEN - 7467**

HOW TO CHART A BETTER SALES COURSE

WITH **GRIGOLEIT** PLASTIC AND METAL TRIM HARDWARE

Improving a product's sales position is often a case of restyling old trim. The Grigoleit Company has men with outstanding experience in this field of design. What's more, Grigoleit has the proper facilities for producing your molded plastic handles, pulls, small plated stampings or metal trim, from either stock or custom tooling.

For prompt attention and early delivery, contact Grigoleit today!

THE GRIGOLEIT COMPANY
"Serving Industry for Twenty-five Years"
742 E. NORTH ST. DECATUR, ILLINOIS

PLASTIC AND METAL TRIM HARDWARE BY GRIGOLEIT

If you write maker identify as **IEN - 7468**

Geared to Industry's Production Demands Since 1887

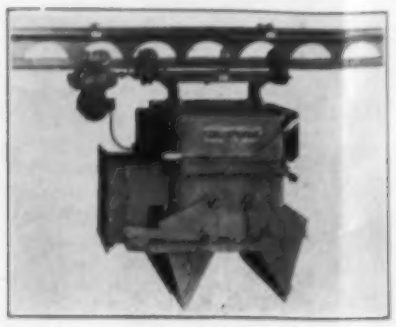
Offering the most complete line of washers available today . . . all types and sizes, all materials, all finishes. More than 25,000 sets of dies. Let us quote on your requirements.

WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2207 S. BAY ST., MILWAUKEE 7, WIS.

If you write maker identify as **IEN - 7469**

CONVEYING . . Motor operated bucket for bulk materials on overhead track

Source: CLEVELAND CRANE & ENGINEERING CO.
1137 E. 283rd St., Dept. IEN, Wickliffe, Ohio



Built to order

New assembly of the company's Tramrail conveying equipment applies a load carrying bucket with a motor-operated bottom gate on a wheeled carrier attached to the motor-driven Tramrail tractor. The equipment includes an elevating section of track with a 25-ft. lift and horizontal runs to two machines into which clay batch is to be delivered. Control centers at push buttons at a mixer at the bottom of the elevator section and at the two production machines.

The bucket advances to one machine or the other when a button is pressed, discharges its load and returns to the mixer station without further attention by the operator. The bucket holds 22½ cu. ft. of material. It is filled by pouring material into it at the top when the motor operated gates are in closed position. Load rating is 1 ton.

If you write maker identify as **IEN - 7470**

TIMING . . Motor driven switch sets to 15 min. intervals in 24 hours

Source: ZENITH ELECTRIC CO.
152 W. Walton St., Dept. IEN, Chicago 10, Ill.

For operation control

Trip levers, permanently assembled in the dial of this new 24-hr. time switch, slide in or out on the dial to set up operating intervals for either open or closed circuit action. A maximum of 48 "on" and 48 "off" operations can be repeated for each 24-hr. overall interval.

Two models are available, one in plain assembly and the other with a calendar device to cut out non-working days. Both are driven by self-starting permanently lubricated synchronous motor for operation on 110-volt 60-cycle ac.

The contacts are single pole double throw design and rate 1,000 watts. Overall dimensions are 6½ by 4½ by 8¼ inches. List price, with the calendar cut-out device, is $47.50. Other voltages and cycles can be specified at various additions to the list. The plain assembly lists at $37.50.

If you write maker identify as **IEN - 7471**

Retractable casters are now available to apply on the stand legs of any of the Delta power tools to assist in moving them from one location to another. The casters bolt in place. They are raised from the floor by foot pedal action or are brought down to raise the stand for free movement. Ask Rockwell Mfg. Co., 624 N. Lexington Ave., Dept. IEN, Pittsburgh 21, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7472**

INTERNATIONAL RECTIFIER
CORPORATION
EL SEGUNDO CALIFORNIA

New! High Temperature

"RED DOT"

Germanium Diodes

AVAILABLE NOW
New, Superior "RED DOT" Series for application from -60° C to +100° C
Write DEPT. J for BULLETIN ER-191

INTERNATIONAL RECTIFIER CORPORATION
1521 E. Grand Ave., El Segundo, Calif. • Phone: DRegon 8-6281
CHICAGO: 205 W. Wacker Drive • Phone: Franklin 2-3889
NEW YORK: 501 Madison Avenue • Phone: Plaza 5-8665

If you write maker identify as **IEN - 7473**

Is this your soldering problem, too?

Higher Speed with Smaller Tips?

The answer is—

HEXACON

SUPER POWERED SOLDERING IRONS

SIX MODELS TO CHOOSE FROM

Tip Dia.	Watts	Cat No.	List Price
1/4	100	P-114	$8.25
1/4	150	P-154	9.00
1/4	200	P-214	10.00
3/8	200	P-238	10.00
1/2	200	P-212	10.00
3/8	300	P-338	13.25

Solder Faster with Lower Tip Cost!
For example, Cat. P-214 has more speed than conventional 200 watt iron, but takes ¼" tip instead of ⅝" *(only 1/6th the copper).*

Write for Catalog showing 40 industrial soldering irons of every type and size; no obligation.

HEXACON ELECTRIC CO.
155 WEST CLAY AVENUE, ROSELLE PARK, NEW JERSEY

HEXACON — Industry's No. 1 Soldering Iron

If you write maker identify as **IEN - 7474**

"MARVEL"

Ball Bearing Portable Electric Blower

Model 2
$60.00
⅓ H.P.

Order one on 10 DAYS' FREE TRIAL

2/5 H.P. Model No. 3 — **$75.00**
1 H.P. Model No. 4 — **$98.00**

For blowing dust, dirt, chips out of motors, switchboards, or ANY industrial product. *Every* industrial plant is a prospect.

Write for Bulletin

Vacuum Cleaner Attachments for $16.00 additional for Models No. 2 and No. 3 only.
In daily use in more than 8,000 industrial plants.

ELECTRIC BLOWER COMPANY
352 Atlantic Ave., Boston 10, Mass., U.S.A.

If you write maker identify as **IEN - 7475**

If you need POSITIVE PUMPING specify VIKING

There's no guess work when you install Viking pumps for moving viscous or semi-viscous liquids. The priming and discharge action is positive and smooth flowing.

The viking "gear within a gear" action and port design allows the material to readily enter the pump. The non-slip action of the gears forces the liquids out in steady volume.

Investigate today, the smooth, even flow of Vikings handling either viscous or thin liquids. To start, ask for bulletin 54SF.

See Our Catalog in SWEET'S

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

If you write maker identify as IEN - 7476

Drive out

FOUL AIR

Blow in

FRESH AIR

with Coppus Type A Ventilator

Assure greater safety, comfort for workers . . . get greater efficiency.

Drive out dangerous fumes, gases, stagnant or hot air from boilers, cable manholes, tanks, vats and other confined places. *Supply fresh air continuously.*

Send now for further information. Coppus Engineering Corporation, 147 Park Avenue, Worcester 2, Mass.

MANHOLES made safe for workers' entrance within minutes.

BOILER AND TANK INTERIORS cooled by Coppus. Fresh air supplied continuously.

ANOTHER **COPPUS** "BLUE RIBBON" PRODUCT

If you write maker identify as IEN - 7477

National Vulcanized Fibre, of course! A curious fact about this wonder material is that for many mechanical purposes it is better and more durable than metal.

what

material

But that's not all! National Vulcanized Fibre is a more versatile performer than a one-man band. It's light in weight, strong, tough, hard as bone or soft as wet rawhide (as you prefer), resilient, wears like iron. It's the ideal electrical insulating material. It can be machined to close tolerances—can be bent, formed, drawn, swaged. No other material possesses all of its electrical and mechanical characteristics.

lasts . . .

and lasts . . .

and

Used profitably in thousands of applications and in many industries, National Vulcanized Fibre is the one material most likely to fit your own fabrication needs.

lasts?

Why not let us help you? Glad to send a descriptive catalog . . . or give first-hand advice. Write to address below, Dept. G-7.

• *National also manufactures Phenolite Laminated Plastic, Peerless Insulation, Vul-Cot Waste Baskets, Materials Handling Equipment and Textile Bobbins.*

NATIONAL VULCANIZED FIBRE CO.
WILMINGTON 99, DELAWARE
FIRST—IN MAKING THE MOST OF LAMINATED PLASTICS

If you write maker identify as IEN - 7479

HOIST . . Drum type electric, 2 and 3 ton, 20 ft. lift at 20 fpm.

Source: AMERICAN ENGINEERING CO.
2476 Aramingo Ave., Dept. IEN, Philadelphia 25, Pa.

Bulletin H531A

Class BB designates two new sizes, rating 2 and 3 ton, that have been added to the company's Lo-Hed electric hoist line. The design is the same as previous units, with the motor on one side and the drum on the opposite side, to suspend the load hook on center and minimize vertical interference. Head room measures 26 in. on both new units.

The motor is available for operation on 220, 440 or 550-volt two or three-phase, 60-cycle ac., or 220-volt dc. The hoist is equipped with a 110-volt transformer to supply the push button control circuit. Limit switches are employed at the upper and lower limits of travel. Construction includes a Weston screw and disc automatic lowering brake and preformed wire rope made of plow steel.

The load block mounts its hook on an anti-friction thrust bearing and encloses ball bearing shrouded sheaves. The assembly measures a little over 40 in. in length by 26 in. in width. It can be specified for bolt suspension or with any one of three trolleys, plain, hand geared or motor driven, to ride an 8 to 15-in. I-beam.

If you write maker identify as IEN - 7480

BUILDING . . Translucent plastic for windows, skylights, partitions

Source: CEILITE CORPORATION
Route 8, Dept. IEN, Allison Park, Pa.

Bulletin, "Ceilite"

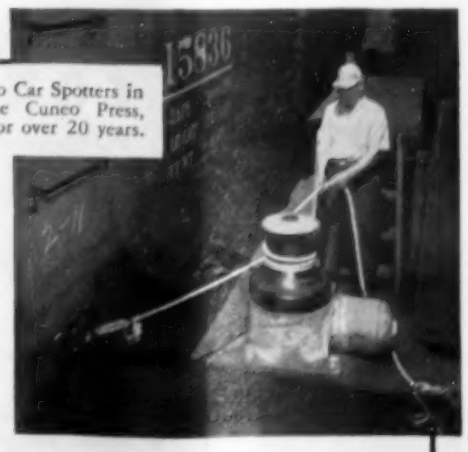
Corrugated sheets to nest with standard corrugated iron, aluminum and asbestos and flat sheets, particularly for window glazing, are included in the new Ceilite line of translucent plastic material. The sheet is reinforced with fiber glass. It can be specified opaque as well as translucent and in a range of permanent colors for a variety of applications.

The corrugated sheet is available in 1¼, 2½, 2.67 and 4.2-in. corrugations for coverage width ranging from 24 to 32 inches. Sheet length ranges from 1 to 8 ft. in the 1¼-in. standard corrugation and from 1 to 12 ft. in the 4.2-in. corrugation. The flat material is available in sheets to 42 by 96 in. and in standard window glazing sizes.

The material will not warp, sag, buckle, crack or craze. It is resistant to attack by most acids, alkalis and industrial fumes. It is shatter proof, light weight and durable. It requires no maintenance or protective coating. Burning embers, sparks, cinders, discarded cigarettes will not ignite the material.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7481



One of two Car Spotters in use at the Cuneo Press, Chicago, for over 20 years.

HERE'S a sure way to reduce demurrage charges

LINK-BELT CAR SPOTTER speeds spotting of cars for loading and unloading. That means reduced switching time and lower demurrage costs. And only one man is needed to move railroad cars. Add up these savings, and there's only one answer: lowered costs, money saved. Available in portable or stationary models for moving up to six loaded railroad cars.

LINK-BELT CAR SPOTTER

Send for Book 2092—for facts on car spotters and drum type pullers.

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

If you write maker identify as IEN - 7482

STOP excess handling of tools, parts, materials!

Stackbin®-Stackrack® Combinations are the ideal way to minimize parts, tools, materials handling. Stackbins are portable containers, so you can carry materials throughout your process without transferring contents to any other container. Stored in Stackracks, every Stackbin is instantly accessible when it's needed. You never disturb another bin. Hopper fronts on Stackbins provide visibility and accessibility to the materials. Available in 7 sizes, Stackbin-Stackrack Combinations make most efficient use of floor space. With inexpensive Adapters any small units can be stacked on larger units. Related items can be kept in one place. Individual units lock together; no tools, no setup time needed.

For full information write to STACKBIN CORP., 1077 Main St., Pawtucket, R. I.

STACKBIN-STACKRACK COMBINATIONS

Mfgd. and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

STACKBIN SYSTEM *"Stacked and Still Accessible"*

If you write maker identify as IEN - 7483

FREE air compressor fact folders

Get the low-down on air compressors — ask today for these new fact folders.

They tell you all about air compressors — how to select them, how to care for them and how to put them to work at new and different jobs.

Write to Worthington Corporation, Section PC.4.13A, Merchandising Division, Harrison, N.J.

PC.4.13

WORTHINGTON

If you write maker identify as IEN - 7484

STEEL TUBING USERS—

Get new working guide FREE

If you use steel tubing of any kind—you'll want this new tubing data folder prepared by Frasse. It covers in detail steel tubing of *every* description—gives analyses, size ranges, mechanical and physical properties, fabricating hints and ideas for end uses. This new Frasse tubing data folder is packed with easy-to-find facts about steel tubing of *all* kinds. Included are:

- Seamless and Welded Mechanical Steel Tubing
- Pressure Tubing • Condenser Tubes • Hydraulic Tubes
- Aircraft Quality Steel Tubing—AISI 1010 and AISI 4130
- Centrifugally Spun Steel Tubing
- Hot Rolled Large Diameter Tubing and Pipe
- Swepco Large O.D. Tubing and Pipe • Capillary Tubing
- Hypodermic Needle Tubing • Bourdon and Shaped Tubing
- Stainless Steel Tubing, Pipe, Fittings and Valves

Edited by Frasse engineers, this collection of pinpointed tubing facts will help show you how to profit with tubing in your product. For your free copy, send your inquiry today.

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17 GRAND STREET, NEW YORK 13, N. Y. • WAlker 5-2200
LYNDHURST • PHILADELPHIA • BUFFALO • SYRACUSE • HARTFORD

If you write maker identify as **IEN - 7485**

JOHNSON UNIVERSAL BRONZE IS PRACTICAL FOR *Many* PARTS

Completely machined from end to end, these bars are available in over 400 sizes. You can see why they are used for many industrial parts besides bearings, bushings and washers. They are free cutting with ordinary tools . . . are non-sparking and corrosion resistant. Johnson Universal Bronze Bars, solid and cored, are available at your nearby Johnson Distributor's.

JOHNSON BRONZE COMPANY
476 S. Mill Street · New Castle, Pa.

JOHNSON Sleeve-Type BEARINGS

Write for folder, "What Do You Do with Bronze Bars?"

If you write maker identify as **IEN - 7486**

how 10 characteristics of GAST rotary AIR MOTORS

solve tough original equipment problems

Just one of these ten inherent advantages of Gast rotary Compressed Air Motors may solve knotty problems on your original equipment applications.

1—Low first cost. 2—Explosion-proof safety. 3—Variable speed. 4—Can't burn out from overloads or stalling. 5—Four vanes — instant starting. 6—Amazing compactness for HP. 7—Light weight —to ¼ of electric motor. 8—Smooth rotary-vane ball-bearing performance. 9—Reversible models. 10—Dependability for long service.

Now standard equipment on many products. Four sizes, many design variations. Vertical or horizontal drives; base or flange mountings. INVESTIGATE NOW!

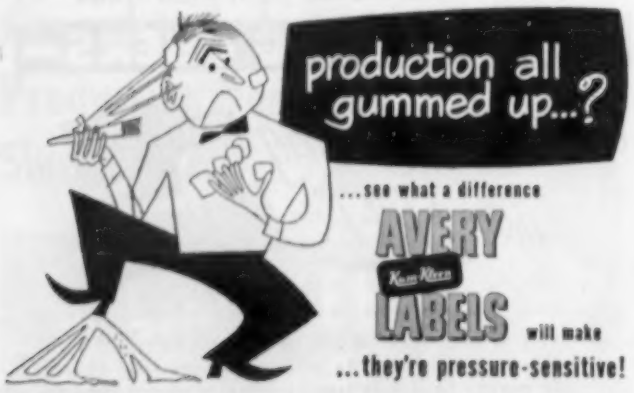
WRITE GAST for Air Motor Bulletins. Request "Ideas" Booklet.

see our catalog in PRODUCT DESIGN FILE or write for copy

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY AIR MOTORS · COMPRESSORS · VACUUM PUMPS
(TO 4 H. P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 319 Pipestone St., Benton Harbor, Mich.

If you write maker identify as **IEN - 7487**



■ Self-adhesive Avery Labels are quick, clean and neat... there's no mess, no fuss, no sticky fingers. Combined with patented Avery dispensers, they'll speed and simplify your labeling—and production! They're laid right on your product —*without moistening.* They'll put your trade mark on that hard-to-label surface...put a warning sticker or wiring diagram on your product or any clean, smooth spot. For inspection stickers...color coding...guarantees—they'll really speed production, packaging or any labeling or marking job!

■ Available in sheets or rolls...in any size, shape or color. Write for case histories and FREE SAMPLES—*today!*

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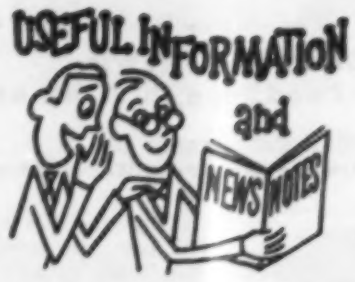
☐ Send us case histories & free samples
☐ Tell us about your dispensers
☐ Have the Avery Label man call

Name _____
Company _____
Address _____
City _____ State _____



If you write maker identify as **IEN - 7488**

AIR CONDITIONING . . Design of ducts is described step by step in new 32-page bulletin

Kaiser Aluminum & Chemical Sales Inc.
1924 Broadway, Dept. IEN, Oakland 12, Calif.

Design procedure based on the use of aluminum is given in detail by new bulletin, "The Design of Aluminum Duct Systems." Information covers friction losses in ducts and fittings, heat losses or gains in ducts, determining required air volume, a step-by-step procedure, and sample computations.

If you write maker identify as **IEN - 7489**

ALUMINUM . . Report on research into aluminum electrical conductors and fittings

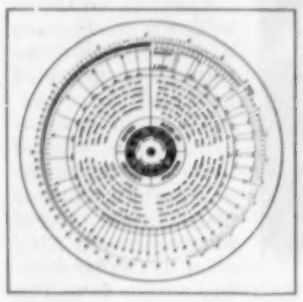
Aluminum Co. of America
725 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa.

How aluminum and electricity grew up together is the first topic in new 20-page booklet, "Alcoa Research and Progress in Electrical Conductors". Other topics are development of steel-reinforced conductor, vibration problems, bus conductors, fittings. Pictures show a variety of research operations.

If you write maker identify as **IEN - 7490**

CALCULATING . . Circular plastic unit multiplies, divides, finds conversion ratios

J. S. E. Gary
116 W. Main St., Dept. IEN, New Iberia, La.



Elwood Pricer is a 6½-in. plastic circular slide rule that lists at $3. Inner and outer scales are in contrasting colors. It carries a set of conversion ratios for fluid measure, dry measure, avoirdupois and troy weights. It also has a scale to figure mark-up in price to a desired profit. Instructions are printed directly on the calculator, front and back.

If you write maker identify as **IEN - 7491**

CALENDAR . . Mid-year special, July 1954 to June 1955, with decimal equivalent chart

Dayton Rogers Mfg. Company
2824 13th Ave., Dept. IEN, Minneapolis 7, Minn.

Letterhead request will bring you a copy of the company's combination midyear calendar and decimal equivalent chart. The combination measures 8 by 16 in. overall. The calendar portion is detachable when it becomes obsolete.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7492**

JUST PLUG IN TO 115V FOR TEMPERATURE RANGE OF +250° TO —100°

Standard Interior Dimensions. 16 x 16 x 16; 20 x 20 x 18 in.

CONRAD PORTABLE TEMPERATURE TEST CHAMBERS

Here is low cost answer to the need for precision controlled temperature test chambers in laboratory or plant. New Conrad test chamber is caster mounted for full portability. Dimensions permit passage through 30" door. Air cooled, no plumbing attachments. Just plug into 115V circuit (220V 3 phase model also available.) Temperature range +250° to —100° F.

PROVEN DESIGN — FULLY INSTRUMENTED

The new Conrad portable chamber is based on years of experience in producing environmental chambers of all types. Interior stainless steel. Insulation is rigid permanent type. Coolant is safe Freon so chamber can be used anywhere with no hazard.

Forced air circulation. Adjustable Indicating Thermostat Controller. Differential + or —2°F. Control Switches grouped on engraved indicator plate. Proportional capacity for heating, cooling rate available.

Conrad also produces a full range of temperature, humidity, altitude environmental chambers; dry or liquid. Write for data sheets and prices.

CONRAD, INC. 141 Jefferson St. Holland, Michigan

If you write maker identify as **IEN - 7493**

If IBH* fits your plant BIG JOE® Solves Your Problems!

*** "IN-BETWEEN HANDLING"**
Short distance hydraulic manipulation of materials too heavy for manual handling yet not requiring high priced power-driven equipment.

You can build a *fleet* of "BIG JOE" hydraulic lift trucks for the price of one power-driven unit . . . at the same time get equivalent lifting and stacking performance, guarantee of quality, selection from 40 specially "IBH-designed" "BIG JOE" 6 and 12 volt models with choice of lever, push-button or throttle controls. Write for booklet on "IBH*".

"HYDRAULIC HANDLING FOR EVERY DEPARTMENT"
BIG JOE MANUFACTURING COMPANY
900-02 W. Jackson Blvd., Chicago 7, Ill.

If you write maker identify as **IEN - 7494**

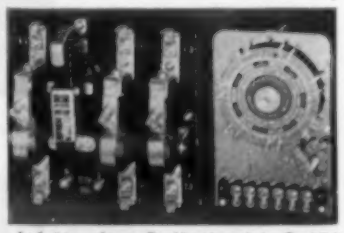
LUMENITE MAGNETIC SWITCHES

For Heavy Electrical Loads Operated by Lumenite Time Switches, Liquid Level Controls, Interal Timers, Electronic Timers, Electronic Switches, or other controls.

To meet the demand for better, more dependable, longer life and trouble-free operation, Lumenite offers a complete line of *Magnetic Switches—Transfer Switches* and *Reversing Switches.* Heavy electrical loads such as pumps, flashing signs, flood light or area lighting systems, emergency power loads, laundry or industrial machines are safely handled by these improved switches. All types—all capacities.

Most advanced construction assures long life of heavy duty service with little or no attention.

SPECIAL — If you have an unusual operation or power control, write us your requirements.



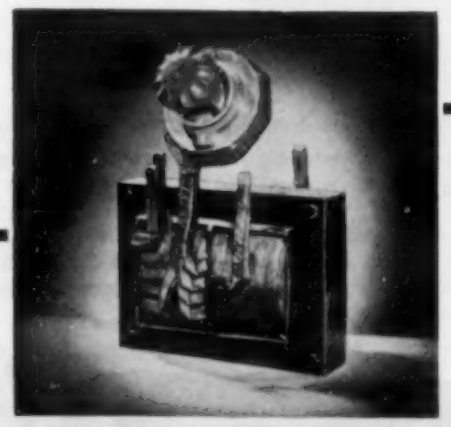
Write for Bulletin M S-451

Lumenite Electronic Co.
407 S. Dearborn St., Chicago 5, Ill.

If you write maker identify as **IEN - 7495**

A Dependable Source of SPECIALTY TRANSFORMERS

Power Type
50 Watts to 5 KVA
Class A or H Insulation



Can be furnished with 8-point tap changing switch. We invite your inquiry on transformers which will match your specific requirements.

THE STRONG ELECTRIC CORPORATION
90 City Park Avenue • Toledo 2, Ohio
Quality Electrical Equipment for a Third of a Century

If you write maker identify as **IEN - 7496**

NEW! Rapistan® SEALED CASTER

at 1/3 less cost than ordinary non-sealed casters!

5200 Series Rapistan Sealed Caster with 6" Sealed MB Demountable Wheel.

Now, for the first time, this revolutionary Rapistan development gives you a heavy-duty cold-forged *sealed* caster at 1/3 *less cost than ordinary leading non-sealed casters!* Save in longer caster life, improved performance, lower maintenance. Dirt, acids, alkalis, brines, other chemicals are *sealed out* of coin-hardened raceways. Ask your Rapistan distributor to show you the comparative service chart, or write direct.

YOURS FREE! *Write for handbook describing Rapistan casters including new 5200 Series.*

The RAPIDS-STANDARD COMPANY, Inc.
280 Rapistan Building • Grand Rapids 2, Michigan

Rapistan® FASTEST GROWING NAME IN CASTERS

If you write maker identify as **IEN - 7497**

New Safety Aluminum Extension Ladder is Easy to Carry, Lasts Longer

Weighing only 1¾ lbs. per foot, this strong, lightweight Safety Aluminum Extension Ladder is easily carried, even in the longer lengths.

The corrosion resistant aluminum offers unusual durability; is immune to rust, rot or mildew. Strong, interlocking-channel side rails assure trouble-free extension. Positive self-locking safety locks (see illustration) are easily adjusted at any height. Rungs are double-bolted to rails, and have heavily serrated top edges to prevent slipping. Combination type feet have super grip rubber treads and self-sharpening spikes. Available in 16', 20', 24', 28' and 32' lengths. Bottom section is available for use as a single ladder. Write for free Bulletin L-76.

New Safety Aluminum Stepladder is Securely Braced

Designed for maximum safety and strength, this easily-handled Safety Aluminum Stepladder weighs only 2⅜ lbs. per foot. Heavy-duty steps are double riveted to extra rigid, channeled side rails. Deeply grooved top and steps prevent slipping. Safety-type spreaders never pinch fingers. All four legs have heavy-duty rubber boots to protect floors and prevent slipping. Available in 4', 5', 6', 7', 8' sizes. Write for free Bulletin L-76.

PS Co. offers a complete line of safe, easy-to-handle magnesium ladders as well as famous "Gold Medal" wood ladders. Write for free Bulletin L-70 and Catalog L-71.

FOR GREATER SAFETY...EFFICIENCY...ECONOMY

THE PATENT SCAFFOLDING CO., INC.

38-21 Twelfth Street • Dept. IEN • Long Island City 1, N. Y.

Branches in All Principal Cities

USEFUL INFORMATION —*Continued*

If you write maker identify as **IEN - 7499**

CASTINGS . . Chart gives properties, correlates designations on cast stainless steels

Empire Steel Castings Inc.
Box 139, Dept. IEN, Reading Pa.

Bulletin 454-S, 4 pages, opens to a two-page chart of information on corrosion and heat-resistant stainless steels which the company supplies in cast form. Standard designations and trade names are followed by analyses, typical mechanical properties and remarks on applications.

If you write maker identify as **IEN - 7500**

ENGINEERING . . Tolerance tables in pocket book are arranged for quick reference

Handy Book Length Co.
3507 17th St. S. W., Dept. IEN, Canton Ohio

"Handy Quik-Tolerances" titles new 4 by 5½-in. book of 112 pages that presents tolerances on industrial dimensions in quick-reference form. It lists at $1 paper bound, $1.98 in leatherette and $2.98 in leather.

If you write maker identify as **IEN - 7501**

FASTENING . . Cardboard slide selector for cartridge-power studs to drive in steel and concrete

Ramset Division
12117 Berea Road, Dept. IEN, Cleveland 11, Ohio

One side of Tru-Set Fastener Selector is for studs to be driven by cartridge explosion into steel. The other is for studs to drive into concrete. The 4¼ by 10-in. slide selector, copyright 1953 but just released, tells fastener number and charge to use for material thickness and type of stud.

If you write maker identify as **IEN - 7502**

FOUNDRIES . . Booklet has sliding index to select pattern equipment by casting quantity

Master Pattern & Mold Co.
1313 Main Ave., Dept. IEN, Cleveland 13, Ohio

Pattern Buyer's Guide has a cardboard slide selector as its front cover. Moving the slide against number of castings required from 1 to 200,000 shows pattern recommendations by type of equipment and location in the 24-page bulletin attached. The booklet is intended primarily to assist those not in the foundry business but concerned with purchase of pattern equipment.

If you write maker identify as **IEN - 7503**

GAGES . . Cardboard slide selector for pitch diameters of plug or ring thread gages

Sheffield Corporation
721 Springfield Ave., Dept. IEN, Dayton 1, Ohio

Gage Selector measures about 4 by 8 in., will be sent on request. It covers threads from No. 0-80 to 12-28 on one side, from ¼-20 to 1½-12 on the other. Thread size is set at the first of two windows. Figures appear at a second window for "Go" and "Not go" on thread gages, plug or ring, in five classes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7504**

If you write maker identify as **IEN - 7505**

HIGHER SPEEDS! FASTER GRINDING!

kipp AIR GRINDERS

MODEL JA
50,000 R.P.M.
$42.00 IN U.S.A.

Weight 12 ounces; length 6⅝ inches; chuck size ¼ inch. Wheel guard removed for better illustration.

The RPM's stay up while grinding...not only when the grinder runs idle. That means better work—longer wheel life.

High speed grinding with small wheels was a Madison-Kipp development of the late twenties. It was born out of a pressing need in our tool room. Because tool room grinding problems are universal, we believe it will pay you to utilize Kipp grinders in your tool room as generally as we do in our own.

kipp

MADISON-KIPP CORPORATION
224 Waubesa St. • Madison 10, Wis., U.S.A.

If you write maker identify as **IEN - 7506**

CHECK . . . COMPARE . . . and you'll choose this saw!

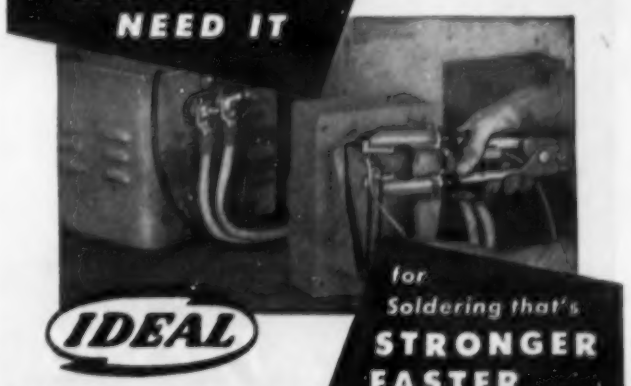
In its class, this Model H is tops. It's the economy, hinge-type model in our complete line. Other models feature FULLY automatic operation. Send for catalog today!

SPECIFICATIONS
Size 9" x 16"
Blade Size ¾" x .032" x 11 ft. 6"
Floor Space 20" x 66"
Blade Travel 60, 90, and 120 ft. per minute
Swivel Vise 45 degrees in either direction
Wt. Appr. 500 lbs.

W. F. WELLS & SONS
Three Rivers, Michigan

If you write maker identify as **IEN - 7507**

HERE'S HEAT AS YOU NEED IT



IDEAL

for Soldering that's **STRONGER FASTER CHEAPER**

Thermo-Grip®

Get production-line speed on solder joints that are perfect every time. No preheating, no cold-flow joints, no remakes... Thermo-Grip's resistance heating puts instant heat right where you need it for best solder adhesion. Can't damage nearby joints or parts. Many capacities and "Plier," "Pencil," "Fork" attachments to cut costs on all types of jobs.

SOLD THROUGH LEADING DISTRIBUTORS

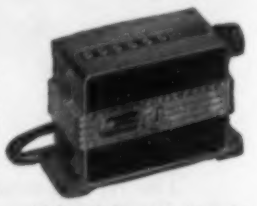
IDEAL INDUSTRIES, Inc.
1108 Park Ave., Sycamore, Ill.
Please send Catalog Data on Ideal Thermo-Grip.
Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as **IEN - 7508**

MODEL "Y" ELECTRIC PRODUCTIMETER

on the MACHINE or at CONTROL CENTER

The flexibility of the Model "Y" Electric Productimeter offers versatility of application to suit individual needs. Panel mounts grouped at control center give immediate production figures of many machines in different plant departments. Operates accurately over wide current fluctuations. Totally enclosed.



Hi-Speed, Compact, Accurate, Durable. Adaptable to panel or base mounting.

DURANT MANUFACTURING CO.

1930 N. Buffum St., Milwaukee 1, Wis. — 130 S. Water St., Providence 3, R. I.

Representatives in Principal Cities

Send for Catalog No. 55

PRODUCTIMETERS *Count Everything* — 75th Anniversary

If you write maker identify as **IEN - 7509**

No more drudgery for me in cleaning grease-caked floors

Flip of switch re-sharpens brushes automatically!

His boss is happy too . . .

and should be. A Finnell 84XR Dry-Scrubber does the job in about one-tenth the time required to hand-scrape the floors, and spares maintenance men the back-breaking effort of manual methods. Two powerful scarifying brushes quickly loosen coatings of dirt, oil, grease, and shavings. Interchangeable rings and brushes adapt the machine to wet-scrubbing, polishing, and steel-wooling. (The Vac illustrated, *Finnell's 10B* for wet and dry pick-up, features a By-Pass Motor.)

Brushes adjust to floor irregularities

For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2607 East St., Elkhart, Ind.

FINNELL SYSTEM, INC. *Originators of Power Scrubbing and Polishing Machines* — FINNELL — BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as **IEN - 7510**

GOT PRESSROOM PROBLEMS?

Solve 'em with FEDERAL *Open back Inclinable* **PRESSES**

STANDARD	DIAL FEED	HIGH SPEED	SPECIAL
Non-repeat clutch — 18 to 80 ton sizes — in geared or flywheel type.	Fast, accurate, safe — 18 to 80 ton sizes — geared or flywheel type.	Air clutch — electro-pneumatic controls — in 18 to 80 ton sizes.	Capscrew, bolt trimming and extruding presses — 26 to 65 ton sizes.

Write for New Catalog No. 13 / **THE FEDERAL PRESS COMPANY** 503 Division St., Elkhart, Indiana

---

USEFUL INFORMATION —*Continued*

If you write maker identify as **IEN - 7511**

GENERATORS . . Installation suggestions on stand-by electric generating plants and controls

D. W. Onan & Sons Inc.
University at 25th, Dept. IEN, Minneapolis 14, Minn.

Technical information is presented in non-technical manner by new 16-page Bulletin T-011-B on electric generators to provide power when commercial power fails. The bulletin reviews methods of control, size of stand-by plant, then goes into detail on switches and their connections, automatic line transfer controls, time-delay relays, location of the plant, cooling, fuel.

If you write maker identify as **IEN - 7512**

MAGNETS . . Booklet tells about their use in handling and conveying steel sheet, pipe, products

Eriez Mfg. Company
Grove Drive, Dept. IEN, Erie, Pa.

Permanent magnets applied to steel handling is the subject of new 36-page Booklet B-212. It deals with present and possible uses such as lifting long strips, moving and positioning pipe, holding pipe in straightening and testing, galvanizing dragout rolls, sheet feeder rolls, sheet fanner assemblies.

If you write maker identify as **IEN - 7513**

MANAGEMENT . . Jobs for graduates, publication offers employment guidance and job locations

Decision Inc.
3705 Broadview Drive, Dept. IEN, Cincinnati 8, Ohio

Decision, the graduate guide to business, is a publication issued yearly without charge to graduates from high school and college. It is intended to assist them in finding a job. Introductory articles tell how to do so. Presentations by individual companies tell about the advantages of employment. The publication is issued for eight metropolitan areas.

If you write maker identify as **IEN - 7514**

MANAGEMENT . . Depreciation of equipment is the subject of new research report by the MAPI

Machinery & Allied Products Institute
120 S. La Salle St., Dept. IEN, Chicago 3, Ill.

"Realistic Depreciation Policy" is new 222-page book, list price $6, that publishes results of a research study on depreciation as treated for tax purposes and also from the standpoint of management policy. One of its findings is that depreciation permitted for federal tax purposes is $7 billion short of a realistic allowance for current capital consumption.

If you write maker identify as **IEN - 7515**

MANAGEMENT . . Textbook on labor relations is intended as an introduction to the subject

Ronald Press Co.
15 East 26th St., Dept. IEN, New York 10, N. Y.

Collective bargaining is the basis of description in new 688-page textbook. "Modern Labor Economics", written by Davis and Matchett. List price is $6. The book is intended as an introduction to labor relations and labor economics, uses excerpts from current agreements and other documents to illustrate its points.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7516**

TRY JUST ONE

DeZURIK EASY OPERATING PLUG VALVE

On liquid, gas or dry-material lines, DeZurik Valves with rubber-faced plugs offer exclusive advantages. They open or close with an e-à-s-y quarter-turn, without binding or sticking; they require no lubrication — almost no maintenance! They're available in sizes from ½" to 20", in a full range of metals, lever, gear or remote operation. Write for recommendations.

DeZURIK SHOWER COMPANY Sartell Minnesota

If you write maker identify as **IEN - 7517**

EXACT WEIGHT Scales

Give Accurate Readings FAST, Eliminate Costly Over-weights

EXACT WEIGHT Scales increase production two ways. Short lever fall plus the action of an adjustable damping device bring scale indicator to rest quickly—and magnified indication makes possible an accurate reading at a glance. In addition to the saving in time, you make an important saving by the elimination of over-weights. EXACT WEIGHT's end-tower models are compactly built to occupy minimum counter space, with clear visibility of the indicator. Weigh accurately in out-of-level position. Available in a wide range of capacities to fit your needs exactly.

Exact Weight *Scales*

Better quality control
Better cost control

THE EXACT WEIGHT SCALE COMPANY

932 W. Fifth Avenue, Columbus 8, Ohio

2920 Bloor Street W., Toronto 18, Canada

If you write maker identify as **IEN - 7518**

END SASH LIGHT REPLACEMENT!

Shatterproof—Crackproof Panes of Flat RESOLITE Last Indefinitely

You can install window and door lights that won't shatter when hit by flying objects; that won't crack when subjected to severe vibration, concussion or intermittant radiant heat. Translucent Resolite — a glass-fiber reinforced polyester resin—is also unaffected by weather extremes of heat, cold or moisture, and by usual industrial fumes.

That's why more and more modern plants are using Resolite for all glazing, including sidewall and skylighting.

Resolite panes are installed like glass. They are factory cut to size, but can easily be cut on the job. Resolite's uniform diffusion of daylight cuts glare, reduces eyestrain. For complete information and name of nearest distributor, write:

RESOLITE Corp., Box 514, Zelienople, Pa.

If you write maker identify as **IEN - 7519**

DEGREASING MIRACLE!

NAVEE'42 Works Instantly!

Photo shows how NAVEE'42, rinsed with water, leaves a perfectly clean surface—it instantly starts to dissolve preservative coatings, grease, oil, carbon stains, asphalt, tar, resins, printing inks, etc. Use it concentrated or even diluted with water. NAVEE'42 gives off no oppressive or dangerous fumes. May be used hot or cold. Try NAVEE'42 in your plant!

How a Degreaser that "COULDN'T BE MADE" Cleans-up for YOU!"

For many years, chemists tried in vain to eliminate cresylic acid (because of hazards) from heavy-duty degreasers and still maintain efficient cleaning action. Twelve years ago, Penetone's chemists found the secret and created NAVEE'42. To date, there is no equal to this product, even though others imitate the name. Customers call NAVEE'42 a degreasing miracle!

Eliminates Hazardous Cresylic Acid Products

NAVEE'42 contains no cresylic acid. It is not only safer, but actually performs more efficiently than many types of products containing cresylic acid! Medical authorities agree contact with cresylic acid causes severe skin lesions, chemical burns and even impairment of vision. Death can occur from over-exposure! Cresylic acid has a maximum allowable concentration of 5 parts per million parts air—this limit is quickly exceeded in hot tank degreasing. NAVEE'42 eliminated all these hazards.

SEND FOR FULL INFORMATION!

the PENETONE co.

Box IEN-754 — Tenafly, New Jersey

If you write maker identify as IEN - 7520

Hamilton Industrial Trucks

Whatever your requirements . . . there's a Hamilton truck just right for your job! Ranging in load capacity up to 12,000 lbs., Hamilton trucks are available in hundreds of styles and sizes—platform trucks, box trucks, stake trucks, shelf trucks, 2-wheel hand trucks, wagon trucks, lift truck systems, dollies, barrel skids and many others. Special trucks of wood or steel are also designed and built by Hamilton to meet particular requirements. Look into Hamilton trucks before you buy! Be sure you get the right truck for your job! It can lower your costs substantially!

WRITE FOR THE Hamilton Catalog TODAY!

The Hamilton Caster & Mfg. Company
1655 DIXIE HIGHWAY, HAMILTON, OHIO

If you write maker identify as IEN - 7521

Now *time* your jobs
AUTOMATICALLY with CALCULAGRAPH!

Prints date..
starting time..
finishing time..
— and total elapsed time!

Save time and eliminate clerical errors with Calculagraph accurate-to-the-minute, printed job time records. Use these data cards for computing costs, estimating on reorders. One Calculagraph can record job time data for an entire shop or department.

NEW!
AUTOMATIC DATER!

Standard on all electric models. Automatically changes date — eliminates incorrect dating of records.

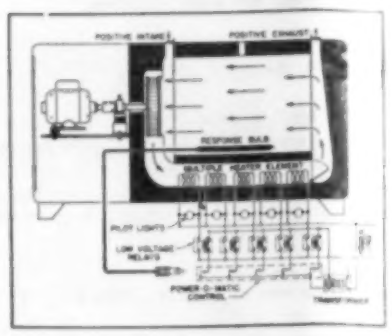
ASK FOR COMPLETE INFORMATION, TODAY
Illustrated literature and sample job cards will be sent promptly on request. Just call or write Dept. 300.

CALCULAGRAPH COMPANY
Sussex St., Harrison, New Jersey
STANDARD OF ACCURACY SINCE 1892

If you write maker identify as IEN - 7523

HEATING . . Electric oven with input control to hold temperature

Source: BLUE M ELECTRIC CO.
306 W. 69th St., Dept. IEN, Chicago 21, Ill.



Controls current input

The control point, at which temperature is set in the company's line of electric recirculating ovens, can be held within ½ deg. C. with its new Power-O-Matic electric control. This new equipment consists of a set of low voltage relays, one to each of the Modella electric elements, with actuation through a transformer from the power line in response to a temperature sensitive bulb located in the oven.

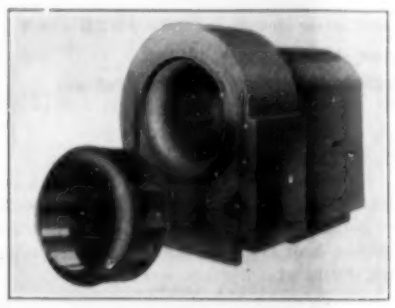
Heating elements are automatically and progressively added to the line to meet the demand for heat. Additional units come on in the event of failure of one or more that are operating. Opening the oven door for inspection, loading or unloading, results in immediate action at the elements to minimize heat recovery time and to prevent change in the oven atmosphere from the control point that has been set.

The ovens in the Blue M Con-Wate line with the Power-O-Matic control are available in a temperature range from 100 to 550 deg. F. They are manufactured in five standard sizes in bench and floor models. Interiors are stainless steel. Exteriors are enameled steel. Insulation is 4 in. of Fiberglas. Input is standard at 110 or 220 volts.

If you write maker identify as IEN - 7524

VENTILATING . . Centrifugal blower with load limiting reverse curve vanes

Source: PEERLESS ELECTRIC CO.
1401 W. Market St., Dept. IEN, Warren, Ohio



NAFM Sizes

Backward Curve designates a new line of centrifugal blowers ranging from 12½ to 36½ in. in impeller diameter. The smallest unit can be specified with a ⅙ to 2-hp. motor in sleeve or ball bearing design. The largest takes a ¾ to 10-hp. ball bearing motor. The motors are belt connected and are the company's own manufacture for this particular blower duty.

The impeller is dynamically balanced and is mounted on a cast iron hub secured on a shaft supported in anti-friction bearings. A matching spun cone assists in directing the air stream for smooth quiet entry, passage through the impeller, and exit through the discharge opening. The company is prepared to supply performance data sheets for each impeller size. List price, with a 110/220-volt 60-cycle single-phase motor, ranges from $276 to $1,625.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7525

WHICH V-BELT *is best for you?*

If the correct size of endless V-Belt is not readily available, or if you have to tear down machinery to install, then the best belt to use is open-end V-Belting fastened with

ALLIGATOR V-BELT FASTENERS

★ In this way you can make up V-Belts in *any length* to fit *any drive* the fast economical way—V-Belts that perform exceptionally well.

★ In contrast to link-type belts these ALLIGATOR fastened V-Belts have just *one* strong joint . . . *stretch and follow-up maintenance are reduced to a minimum.*

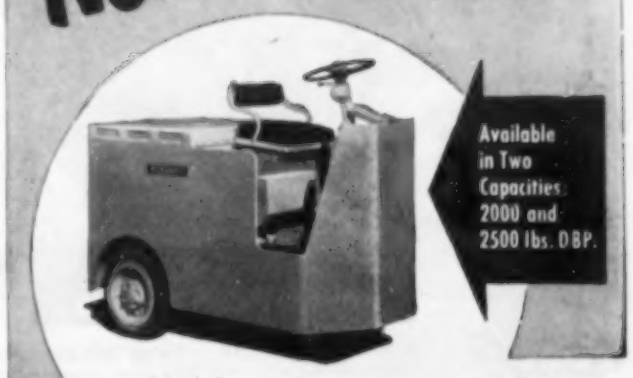
ALLIGATOR INTRODUCTORY V-BELT DRIVE UNITS

contain V-Belting, Fasteners and Tools—everything you need in one compact package to make up V-Belts quickly. Available in sizes A, B, C & D.

Ask for Bulletins V-215 and V-216
Order From Your Distributor
FLEXIBLE STEEL LACING COMPANY
4610 Lexington Street • Chicago 44, Ill.

If you write maker identify as IEN - 7526

New MERCURY "TUG" ELECTRIC TRACTOR



Model 550

The compact, versatile, new MERCURY "Tug" electric tractor. Features *automotive type steering* ...4-speed magnetic contactor control with timed acceleration and controlled plugging . . . new type double reduction drive with demountable wheel rim and tire assemblies . . . self-energizing hydraulic brakes and new type semi-elliptic spring suspension. Available in twin-3 wheel, or 4 wheel model with wide front tread.

MERCURY
FORK TRUCKS · TRACTORS · TRAILERS

For complete information write:

MERCURY MANUFACTURING COMPANY
4132 S. Halsted St., Chicago

If you write maker identify as IEN - 7527

SPRACO NOZZLES

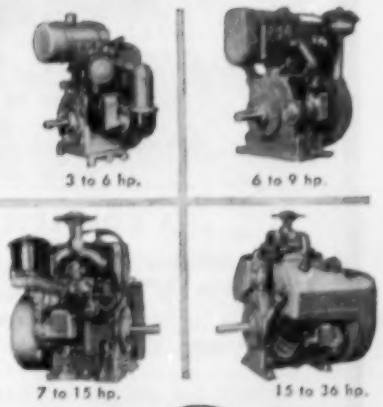
Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as IEN - 7528

Most Specified for
ORIGINAL EQUIPMENT POWER

WISCONSIN HEAVY-DUTY *Air-Cooled* ENGINES

3 TO 36 HP.



In the design, manufacture, and ultimate use-purchase of mechanized field and industrial equipment . . . Wisconsin Heavy-Duty Air-Cooled Engines are specified as Original Equipment Power Components to a greater extent than any other make of engine, within a 3 to 36 hp. range.

This dominant preference must necessarily be based on actual *performance records* of users ... because Wisconsin Engines are not sold on a "price" basis. These engines have the inherent Lugging Power that *stays with the job*, eliminating "stop-and go" delays, saving manpower and manhours . . . and delivering "Most H. P. Hours" of on-the-job service, with minimum servicing.

If this makes sense to you, let's get together. Write for engineering and descriptive data.

Power TO FIT THE JOB · Power TO FIT THE MACHINE

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 7529

THE HOLE IN THE DIKE — History tells us of the brave Dutch lad who, until help came, plugged this hole with his finger. History too, 70 years of it, has made for H & K an honored name in the business of perforating. They say "If it can be perforated H & K can perforate it."

We perforate round holes 1/50" in diameter and others ranging up to 9" diameter, slots, squares, triangles and other shapes — thousands of sizes and arrangements in stainless steel and all the metals, as well as plastics.

Send us your problems and your specifications—our engineers will be glad to help.

Complete catalog No. 62 sent gratis upon request

The Harrington & King Perforating Co.

5637 Fillmore Street, Chicago 44, Ill.
114 Liberty Street, New York 6, N. Y.

If you write maker identify as IEN - 7530

MODERN TIME AND COST SAVERS BUILT BY... Standard GRAVITY & POWER CONVEYORS

LIFT OR LOWER— FLOOR TO FLOOR WITH A

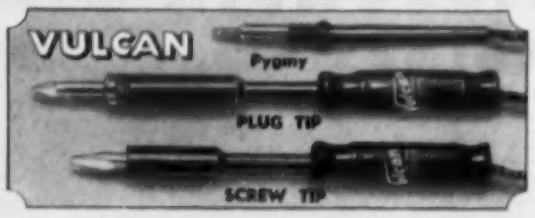
STANDARD INCLINEBELT

Move boxes, cases, cartons, sacks or bundles from basement to first floor, or any floor to floor — continuously with the Standard Inclinebelt. Compact — simple to install — minimum maintenance and attention. Lifts or lowers 10 to 20 lbs. of live load per ft.; floor elevations of 8 ft. to 14 ft. 6 inches inclusive; two belt widths to handle commodities 15½ inches to 25½ inches wide. Electric motor operated. Write for INCLINEBELT Bulletin — address Dept. IEN-74.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

If you write maker identify as IEN - 7531

VULCAN
ELECTRIC SOLDERING TOOLS



A COMPLETE LINE

of fine professional Electric Soldering Tools. Three types. 18 sizes, from 1¾" diameter tip for the heaviest soldering to ⅛" tip for the most delicate work. Tips are of finest forged copper. (Catalog will be sent by return mail.)

LENGTHEN THE LIFE of your Soldering Tool with Vulcan DUREVER (ironclad) Soldering Tips of pure forged copper, with a special metal coating that protects the copper from corrosion and oxidation. DUREVER tips outlast ordinary copper tips, do away with dressing and filing. (Ask for folder that tells why.)

VULCAN ELECTRIC CO.
DANVERS 8, MASS.

Vulcan Electric Soldering Tools, Solder Pots, Glue Pots, Branding Irons. Vulcan Electric Heating Elements.

USEFUL INFORMATION —*Continued*

If you write maker identify as IEN - 7532

PLANT SITES . . Area map lists facilities of central-eastern Ohio region for plant location

Ohio Edison Co.
47 N. Main St., Dept. IEN, Akron 8, Ohio

"Center of Industrial America" is title of new 23 by 18-in. map available from the company's Industrial Development Department. It shows area covered by the company's electric power service, summarizes facilities such as water, coal, salt, silica, clay, limestone, forests, gypsum, railroads, highways.

If you write maker identify as IEN - 7533

PUMPS . . ABC information on centrifugal pump design, selection, application

Ingersoll-Rand Company
11 Broadway, Dept. IEN, New York 4, N. Y.

Schematic illustrations and non-technical text are employed in 12-page Bulletin 7287 to cover the subject, "Centrifugal Pump Fundamentals." It describes centrifugal pump analogies, total head or pressure, capacity or quantity delivered, specific gravity or weight of liquid, hydraulic hp., brake hp., pump performance.

If you write maker identify as IEN - 7534

RECTIFYING . . Company urges return of discarded selenium rectifiers to conserve material

Sarkes Tarzian Inc.
415 N. College Ave., Dept. IEN, Bloomington, Ind.

Salvage drive to reclaim selenium has been started by the company through its distributors. It urges return of any discarded selenium rectifiers and stacks you may have, regardless of make, in order to reclaim the selenium they contain. You can write direct for the name of your nearest distributor.

If you write maker identify as IEN - 7535

ROCK DRILLING . . Instruction booklet on how to install bolt support for rock excavations

Ingersoll-Rand Company
11 Broadway, Dept. IEN, New York 4, N. Y.

Rock bolting, a method of supporting roof and sides of rock excavations as in mines, is described by new 12-page Bulletin 4155 as to theory, advantages, bolt types, installation methods. Details are given on rock drills and impact wrenches.

If you write maker identify as IEN - 7536

SAWING . . Wall chart lists saw blades along with illustrated sugestions on how to use them

Victor Saw Works Inc.
Dept. IEN, Middletown, N. Y.

Three tables in new 17 by 22½-in. "Right Blade" wall chart list recommended type of blade by the material to be cut. They are for hand and power hacksaw blades and for bandsaw blades. Below the tables are illustrated suggestions on how to use saw blades, also saw-blade troubles and remedies.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7537

A PAID NEWS ADVERTISEMENT BY SOLA ELECTRIC CO.

SOLA CONSTANT VOLTAGE TRANSFORMER — regulates ±1% with less than 3% harmonic distortion

Type CVH Sola Constant Voltage Transformers are designed for use with equipment that requires a source of constant, undistorted voltage. Regulation is ±1%, distortion less than 3%.

They may be used for the most exacting applications such as general laboratory work, instrument calibration, precision VHF and micro-wave testing, or other operations involving elements which are sensitive to power frequencies harmonically related to the fundamental.

Regulation is automatic, recovery is 1.5 cycles or less. There are no moving parts, no manual adjustments and every unit is self-protecting against short circuit.

These harmonic filtered Sola Constant Voltage Transformers are available from your electronic distributor in the following capacities: 60va, 120va, 250va, 500va, 1000va and 2000va.

Write for 28 page Bulletin 13G-CV-200 which describes the complete electrical and mechanical characteristics of Sola Type CVH and other Constant Voltage Transformers.

SOLA ELECTRIC CO.
4633 West 16th Street, Chicago 50, Illinois

If you write maker identify as IEN - 7538

Now...a machine that prints your product as you make it

Here's the practical modern way to print trademarks, brand names, part numbers, all-over decorative designs on any material processed in a wide web — sheathing, wallboard, linoleum, gasket material, paper, plastics, cloth, laminates, etc. This GOTTSCHOPRINTER operates as part of your present production set-up, eliminates cost of printing as a separate operation. Clean, permanent impressions assured on anything from .001" to 1.0" thick . . . flexible or rigid . . . up to 74" wide.

Write for details

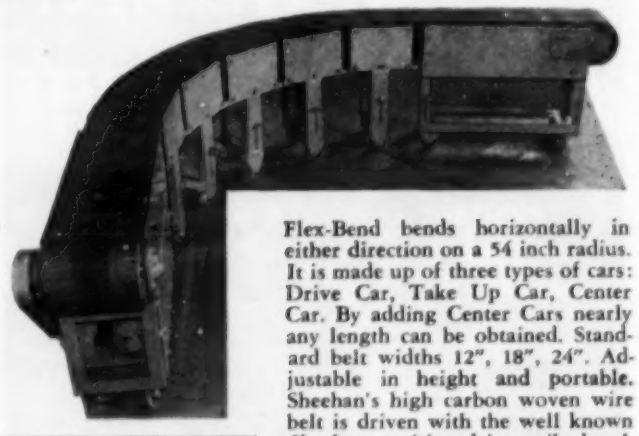
Gottscho **ADOLPH GOTTSCHO, INC.** Hillside 5, N. J. 50 Years of Leadership

In Canada: RICHARDSON AGENCIES LTD., Toronto & Montreal

If you write maker identify as IEN - 7539

Sheehan's FLEX-BEND CONVEYOR

Place your equipment where you like. Flex-bend gets there horizontally.



Flex-Bend bends horizontally in either direction on a 54 inch radius. It is made up of three types of cars: Drive Car, Take Up Car, Center Car. By adding Center Cars nearly any length can be obtained. Standard belt widths 12", 18", 24". Adjustable in height and portable. Sheehan's high carbon woven wire belt is driven with the well known Sheehan positive drive spiked pulley. Flex-Bend rolls completely on roller and ball bearings. Cuts down friction, giving long life. Rigidly built, easy to move. Practically maintenance free.

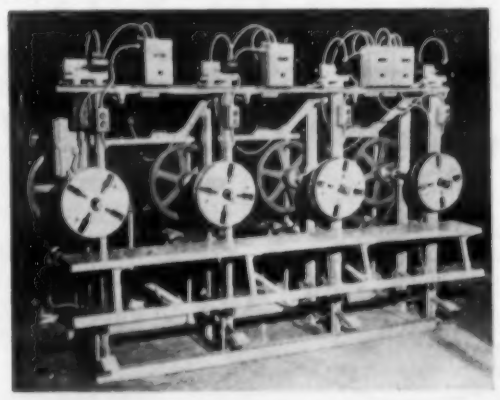
Flex-Bend is sold by the car. Write for literature, and exceptionally low prices.

Conveyors

R. T. SHEEHAN CO.
807 N. Territorial Road Plymouth, Mich.

If you write maker identify as IEN - 7540

DARE MULTIPLE WIRE COILER-SPOOLER



Coils or spools wire from large rolls to smaller units for packaging or handling. Made in any multiples desired, each with independent spindle control. Automatic stop motion to any predetermined length. Winds clockwise or counter clockwise.

- Quick coil release for removing finished coils.
- Over running safety prevents wire breakage.
- Controlled slow start stops back lash.
- Optional level wind attachment.

Standard machines can be altered to meet special needs. Send us your requirements for cost estimate. No obligations.

DARE PRODUCTS, INC. 860 Batterly Road Battle Creek, Mich.

If you write maker identify as IEN - 7541

INDIVIDUAL VULCANAIRE DUST COLLECTING UNITS

Are used on surface and other grinders where grinding dust must be removed.

Inexpensive, compact units, with no moving parts. Operated from your present air supply.

Installed in a few minutes, eliminating need for costly centrally located dust collecting systems.

The collector element is mounted on the side of the machine. Quickly cleaned, requiring no refills.

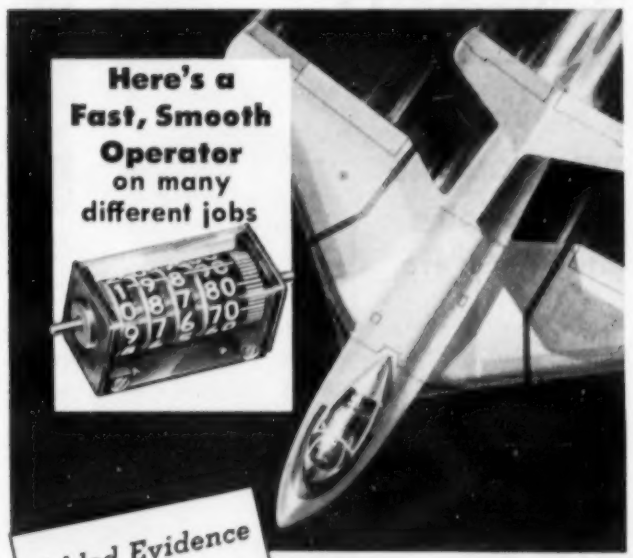
Vac-suction pick-up device (vacuum nozzle) is mounted on the grinding wheel guard or close to grinding wheel on other applications. This mounting permits constant contact with dust as the wheel is moved up or down.

A simple needle valve operates the unit, and can be shut off whenever the machine is not in use.
Available in 700 series for grinding wheels 7" dia. or less.
Made by the makers of Vulcanaire The jig grinding attachment.

Write on your letterhead for "Dust Collector" Booklet.

VULCAN TOOL CO.
734 Lorain Avenue, Dayton 10, Ohio

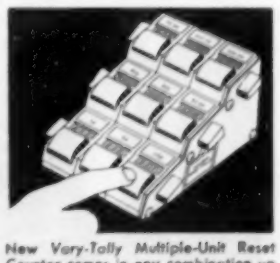
If you write maker identify as IEN - 7542



Added Evidence that . . .

Everyone Can Count on VEEDER-ROOT

This new, high-speed direct-drive counter . . . with its one-piece "show window" case . . . was first developed for use in navigational and directional instruments. Then, because of its many adaptable features, it is eligible for employment in many other jobs. It's good for speeds up to 1800 rpm . . . temperatures from 67° to 185° F . . . and it's corrosion resistant. Drive shafts can be longer on either side or both. And base may be lengthened to take more figure-wheels if you want. All in all, a remarkably versatile performer . . . one of scores of standard and special Veeder-Root Counters for every mechanical and electrical application from Electronics to Automation. Write:



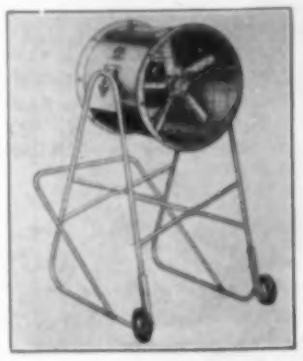
New Vary-Tally Multiple-Unit Reset Counter comes in any combination up to 6 banks high, and 12 units wide. Write for news sheet and prices.

VEEDER-ROOT INCORPORATED
"The Name That Counts"
HARTFORD 2, CONNECTICUT
Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

If you write maker identify as IEN - 7544

VENTILATING . . Motor driven fan on wheel equipped stand, 24 to 48 inch

Source: M & E MFG. COMPANY
2571 Winthrop Ave., Dept. IEN, Indianapolis 5, Ind.



Bulletin 500

Mancooler designates this new portable motor driven fan in which the impeller and motor are mounted in a screen protected tubular section assembled on a wheel equipped steel tube stand. The fan can be employed for general cooling and also for accelerated air drying, spot exhausting of steam, smoke and fumes created by temporary conditions.

Sizes range from 24 to 48 in. with air handling capacity at 4,360 to 32,400 cfm. The fan enclosure can be directed downward, horizontally or upward. A hinged cover in the top provides access to the motor.

If you write maker identify as IEN - 7545

INSULATING . . Vulcanized fiber, plain and laminated with plastic film

Source: NATIONAL VULCANIZED FIBRE CO.
Maryland & Beech, Dept. IEN, Wilmington 99, Del.

Technical data upon request

Naco Insulation is a new rag base vulcanized fiber. It is available in sheets, rolls and coils in thickness to 1/32 inch. It is designed for insulation applications in motors, generators, transformers.

Naco-Mylar is a new combination sheet in which Mylar polyester film is applied in thicknesses from 0.0005 to 0.005 in. on one or both sides of the Naco sheet. This new material is particularly for use in motor slot and transformer insulation requiring high dielectric strength combined with toughness.

If you write maker identify as IEN - 7546

TRUCK . . Two wheel hand unit designed to handle 1,000 lb. drums

Source: MORSE MFG. COMPANY
755 W. Manlius St., Dept. IEN, East Syracuse, N. Y.

Float-Load No. 150

This new truck rides on rubber tired roller bearing wheels and is fitted with a nose particularly designed to deposit or remove drums in tightly packed rows and to up-end them on the floor or deposit them on pallets to 8 in. in height. The truck measures 20 in. in width. It will take drums from 24 to 45 in. in length and diameters measuring 15 in. or more. Overall length is 61 inches. Width at the handles is 24½ inches. The wheels measure 10 inches. The truck weighs 60 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7547

A PAID NEWS ADVERTISEMENT BY MINNESOTA RUBBER AND GASKET CO.

NEW RING SEAL DESIGN GIVES TIGHTER SEAL, LONGER LIFE

Quad Ring* eliminates "spiral twist"

New type rubber ring seals that give long-lasting performance under conditions causing O-ring failure are being sold exclusively by the **Minnesota Rubber and Gasket Company, Minneapolis, Minnesota.** The new rubber seal, registered under the trademark, "Quad Ring," seals tightly under extremely high or low pressures.

Quad Rings have twice as many sealing surfaces as O-Rings, yet generate less friction in reciprocal motion than O-Rings. Quad Rings slide easily and smoothly even where lubrication is difficult. Quad Rings eliminate spiral twist, a principal cause of O-Ring failure. Manufactured by the exclusive rubber injection molding process of Minnesota Rubber, Quad Rings feature extremely high density and complete absence of "flash." Dimensions of Quad Rings correspond with industry standards for O-Rings and may be substituted in O-Ring packing grooves with no additional machining.

For complete information, write the Minnesota Rubber and Gasket Co., Dept. 330, 3630 Wooddale Avenue, Minneapolis 16, Minnesota.

*Reg. U. S. Pat. Off.

If you write maker identify as IEN - 7548

YOU NEED A . . .

DUPOR No. 10

Chemical Cartridge Respirator

Nearest thing to a gas mask! Double filters guard against nuisance gases, smoke, chemical fumes. Available in Code "A" for inorganic gases; Code "B" for organic vapors; Code "AB" for inorganic and organic use. Supplied with Code "B" cartridges unless otherwise specified. Order sample today, $5.00 postpaid.

H. S. COVER, SOUTH BEND, IND.

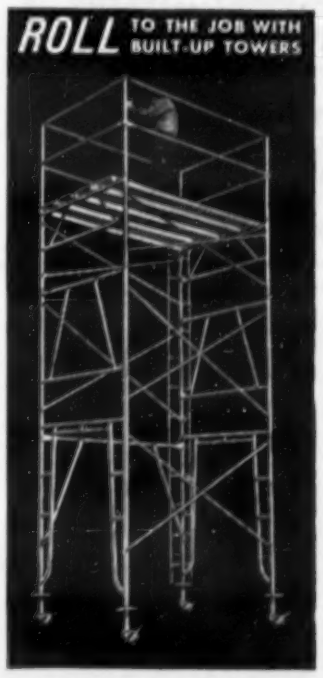
"Respirators for Industry since 1894"

If you write maker identify as IEN - 7549

2 WAYS to S-T-R-E-T-C-H YOUR MAINTENANCE DOLLAR

LIKE SEVEN LEAGUE BOOTS, these practical work towers will *stretch* your working stride, help complete more work in less time. They speed overhead maintenance on plant equipment and buildings because they put your skilled hands *where the work is* . . . quickly and safely. SAFWAY work towers come in two useful types:

ROLL TO THE JOB WITH BUILT-UP TOWERS



Towers of any height or shape easily assembled with standard tubular steel SAFWAY Scaffolding. Parts are interchangeable—can be re-used in other forms. Built-in ladder. Swiveling casters lock at working position. 8, 12 and 16-ft. towers available in complete "packages."

RISE 7 TO 17 FEET WITH PUSH-BUTTON CONTROL

SAFWAY Moto-Lift reaches work 22-23 ft. high. Hydraulic lift extends 10 ft. in 25 sec. No electric connection—auto battery powers motor to raise tower 45 times per day on one charge. Recharges overnight. Tower telescopes to pass through low, narrow doors. Positive safety device.

Learn how you can complete elevated maintenance faster—cheaper—safer with these multi-purpose work towers. Write for this new bulletin.

RENTED and SOLD by distributors everywhere

SAFWAY STEEL PRODUCTS INCORPORATED
6228 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

If you write maker identify as **IEN - 7551**

MACHINE LOADING, SCHEDULING DISPATCHING AND JOB ASSIGNMENT

Bulletin outlining procedure widely used for the cost-cutting results now available:

Visual Scheduling . . . a glance at Board shows work ahead for each machine or man.

Order Sequence . . . quickly indicated by arrangement of tickets representing orders.

Schedule Changes . . . easily specified by rearranging tickets in revised sequence.

No Delay Between Planning and Dispatching . . . no lists or records to write.

Operation According to Plan Assured.

Readily Adaptable . . . to production, assembly, maintenance, engineering and work of every variety, using work orders, time tickets, move tickets, tabulating cards, etc., and McCaskey Machine Control Boards.

Write today for your copy of illustrated Bulletin A-630 IEN

McCaskey INDUSTRIAL CONTROLS
PRODUCTION · INVENTORY · TOOLS · COSTS · MAINTENANCE
THE McCASKEY REGISTER DIV.,
Victor Adding Machine Co.
ALLIANCE, OHIO
Galt, Canada Watford, England

If you write maker identify as **IEN - 7552**

ONLY ACME OFFERS YOU 2 BUSHING STANDARDS

TOTALING
16,984 SIZES

Reduces "Specials" . . . Speeds Delivery . . . Cuts Costs

Only Acme offers two bushing standards giving you 9,870 EXTRA thin wall sizes...sizes now costing you premium prices elsewhere and delaying your production. SAVE *time* and *money*. Write for FREE catalog now.

215 N. LAFLIN ST. **ACME** Industrial Company CHICAGO 7, ILL.

MAKERS OF HARDENED AND GROUND PRECISION PARTS

If you write maker identify as **IEN - 7553**

Steel SHOP and TOTE *Boxes*

*In quantity lots. Write for prices for quantity you need. Prices F.O.B. Michigan City, Indiana.

17½" long x 8" wide x 13" deep
(Inside Dimensions)

Why pay for 4 to 6 boxes and only get one? Thousands of manufacturers have used these boxes for years at great annual savings. You too can cut costs! Just tell us how many you need. We'll give you the lowest prices, fill your needs completely at savings up to 75%.

BARNES and SMITH CORPORATION
6521-A W. State Street • Milwaukee 13, Wis.

USEFUL INFORMATION—*Concluded*

If you write maker identify as **IEN - 7554**

SIGNALING . . Where to use industrial television is described by illustrated suggestions in new folder

Radio Corporation of America
1941 Front & Cooper St., Dept. IEN, Camden 2, N. J.

Twenty basic applications of the company's TV Eye closed-circuit television equipment are presented in new 16-page pocket folder, Form 3R-2335. Some of these are remote viewing of inaccessible gages or dangerous operations, directing traffic, protecting plant entrances and enclosures.

If you write maker identify as **IEN - 7555**

STEEL . . Pocket data book, 128 pages, deals with free machining steel in screw machines

La Salle Steel Co.
P. O. Box 6800-A, Dept. IEN, Chicago 80, Ill.

"Helpful Data Handbook 11" will be sent you on letterhead request to assist in applying free-machining cold-finished steel bar in automatic screw machines. It follows usual procedure in estimating and layout by presenting standard tolerances, tables of stock footage to make 1,000 pieces, weights, speeds and feeds, production tables. It gives helpful suggestions on machining practice, drill failures and troubles tables.

If you write maker identify as **IEN - 7556**

THREADING . . How to select tap drills is the subject of 24-page technical data bulletin

National Twist Drill & Tool Co.
Dept. IEN, Rochester, Mich.

"Drilled Holes for Tapping" is published by the Metal Cutting Tool Institute and is offered on request by the company. It describes other factors than drill size that enter into production of a clean, round, straight hole of the correct diameter, noting that in most materials a drill may be expected to cut oversize. It correlates percentage of thread, minor diameter, probable drilled hole size.

If you write maker identify as **IEN - 7557**

LIFT TRUCKS . . House publication issue tells how five companies in five industries handle material

Clark Equipment Co.
Dept. IEN, Battle Creek 49, Mich.

Material Handling News in its Spring 1954 issue carries articles on handling procedures used by firms in stevedoring, toiletries manufacturing, wood products manufacturing, building supply and construction industries. Four use fork trucks and the fifth uses straddle carriers. Your name will be added to the list to receive this and following issues.

If you write maker identify as **IEN - 7558**

WELDING . . Wall chart and design manual on stud welding method of fastening to steel surfaces

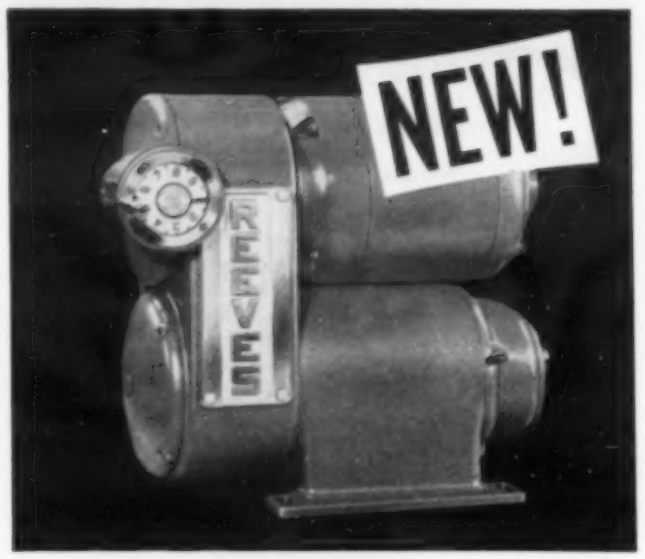
Nelson Stud Welding
E. 28th St. & Toledo Ave., Dept. IEN, Lorain, Ohio

Wall chart No. 1, 18½ by 24 in., illustrates equipment used in stud welding, lists standard welding studs and illustrates special-purpose studs as suggestions on design possibilities. Accompanying the chart is a 12-page booklet, "How to Design for Nelwelding," describing the studs, how to locate them, limiting dimensions of production and portable equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7559**

If you write maker identify as **IEN - 7560**



REEVES *Fractional HP Vari-Speed Motodrive with* **10:1** *speed range. Completely new design! Check all these Reeves extras!*

1 Speeds from 3 to 4660 rpm. Speed ranges to 10:1.
2 New "all-position" 14-turn handwheel control.
3 New "full-vision," sealed speedial indicator.
4 New horizontal or vertical down output shaft.
5 New spiral groove lubrication.
6 112 different assemblies to choose from.

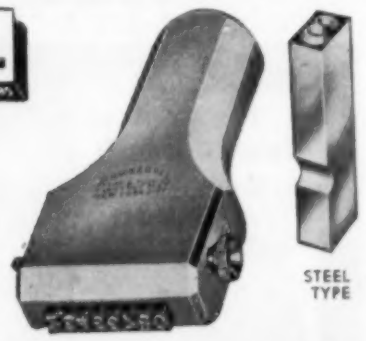
Send today for complete details and new catalog. Specify IN9a-M543.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

If you write maker identify as **IEN - 7561**

NUMBERALL

IMPROVED TYPE HOLDERS for stamping into Metal, etc.

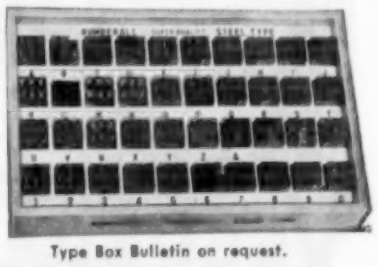


Hand or Press style. Type can be easily, quickly loaded and unloaded. Simplest construction . . . just a sturdy pin holds the type securely. No screws nor springs. Super-quality steel type made in various sizes: 1/32" up to ½" figures and letters.

Write for Bulletin IEN23H

TYPE AND TYPE BOX

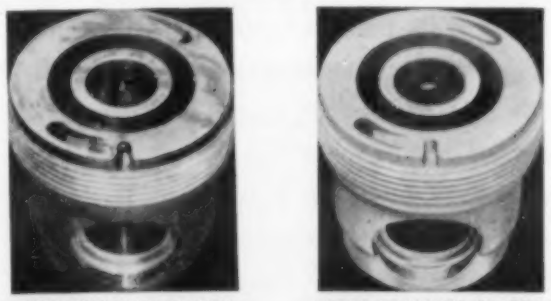
Indexed Sectional Type Box with separate compartment for each character. Two sizes for small and large type.



Type Box Bulletin on request.

NUMBERALL STAMP & TOOL CO.
HUGUENOT PARK STATEN ISLAND 12, N. Y.

If you write maker identify as **IEN - 7562**



BEFORE PRESSURE BLASTING AFTER PRESSURE BLASTING

CLEAN AND DEBURR PRECISION CASTINGS . . . NO STOCK REMOVAL OR ETCHING . . . WITH PRESSURE BLAST!

MODEL A . . . ONE OF 4 STANDARD UNITS. CUSTOM MACHINES DESIGNED TO FIT SPECIAL REQUIREMENTS.

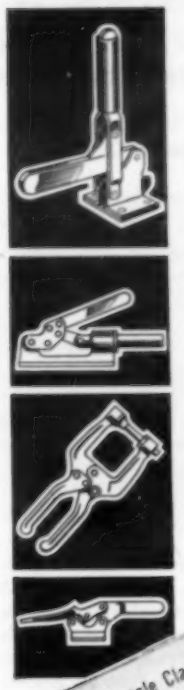
ONLY PRESSURE BLAST GIVES YOU 2-SPEED WET-BLASTING

FREE . . . Learn what PRESSURE BLAST can do for you! Die and Mold Polishing, Blending Grind Lines, Deburring, Heat Treat Scale Removal, Honing of Cutting Tools, Pre-plating Cleaning . . . Hundreds of proven, money-saving applications!

Write for our new 8 page fully illustrated Booklet . . . or send samples of work you want tested to:

The CRO-PLATE Company, Incorporated
747-3 Windsor Street
Hartford 5, Conn.

If you write maker identify as IEN - 7563



WESPO

TOGGLE CLAMPS

NOTE THESE IMPORTANT FEATURES:

1. Reamed holes—for better bearing
2. Hardened Bushings, Serrated to prevent turning
3. High tensile strength rivets—for longer service.

Corrosion resistant black oxydized finish.

A CLAMP FOR EVERY WORK HOLDING NEED

35 Sizes Available

WESPO TOGGLE CLAMPS are engineered and constructed for positive holding and light, medium and heavy clamping.

Write Today for Free Bulletin

West Point Mfg. Co.

26941 W. SEVEN MILE RD.
DETROIT 19, MICHIGAN
TWX—DE894

If you write maker identify as IEN - 7564

S.S.WHITE

ELASTOPLASTIC

PLUGS AND CAPS

When you invest money in an expensive part or piece of equipment, it's just good business to protect your investment against needless damage during shipment and storage. And one way to do this — at minimum cost — is with S.S.White Elastoplastic Plugs and Caps. These inexpensive flexible plastic plugs and caps are designed to cover or seal important openings or studs. They keep dirt and moisture out of interior parts — protect the protruding ends of tubing and studs against damage — and seal in hydraulic fluids.

Besides being low in cost, S.S.White Elastoplastic Plugs and Caps are easily applied and removed — they're unaffected by oil, grease and gasoline and are available in a wide range of sizes for every need.

WRITE FOR BULLETIN P-5312

It has full details on S.S.White Elastoplastic Plugs and Caps. Sample plugs and caps can also be furnished on request.

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO.
Dept. NP, 10 East 40th St.
NEW YORK 16, N. Y.
Western District Office • Times Building, Long Beach, California

If you write maker identify as IEN - 7566

PYROMETER . . Precision instrument reads temperatures, serves as standard

Source: TECHNIQUE ASSOCIATES
2047 N. Parker Ave., Dept. IEN, Indianapolis 18, Ind.

Trade named Pyrotest

Model 9-A designates, actually, an assembly of five precision pyrometers in one portable case with selection, by means of a scale plate and range selector switch, for operation with a chromel-alumel, iron-constantan, platinum-13 per cent rhodium, platinum-10 per cent rhodium couple, or to read millivolts. Accuracy is within 0.17 per cent of full scale. Sensitivity is to 10 microvolts. The instrument measures dc. potentials to 53 millivolts. Effective open scale length, for each range, is 50½ inches.

The instrument will measure temperature at one or more points when employed with a test thermocouple or a number of thermocouples and a selector switch. It applies in checking temperature reading instruments, millivoltmeters, potentiometers, thermometers. It will check working thermocouples against standards. It is suited for use as a laboratory standard.

Measurements are made by balancing an unknown emf. with a voltage drop across a calibrated slide wire. Null balance is obtained by manual adjustment. The null balance indicator is a sensitive galvanometer of taut suspension type with a zero adjuster. The scales are photo-etched aluminum discs that can be washed with soap and water. Assembly is in a maple case with a removable cover and a carrying handle.

Dimensions are 12¼ by 9 by 8½ inches. Weight is 12 pounds. The instrument is provided with cold junction compensation for each range for ambient temperature between 32 and 120 deg. F. Input is by a Mallory mercury-"A" battery. No current is drawn from external circuits as measurements are being made.

If you write maker identify as IEN - 7567

TRUCK . . Wheel mounted tank and equipment for safe acid handling

Source: AUTOMOTIVE RUBBER CO.
12550 Beach Road, Dept. IEN, Detroit 28, Mich.

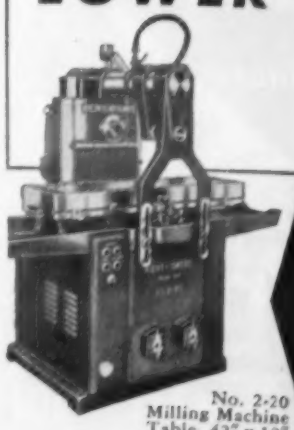
Protects workers

Model XB-425 designates a new assembly of 425-gal. rubber lined tank mounted on pneumatic tired wheels and equipped with a tow bar. The complete assembly includes four 50-ft. lengths of acid hose with nozzles, an overflow funnel, gage glass and fittings, pneumatic controls, air filter, air gage and gage board and 75 ft. of ½-in. air hose. The tank will handle pressure to 40 pounds. The rubber lined valves are Saunders patent design. Air pressure is employed in the small hose to apply pressure on the acid in the tank for unloading operations.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7568

LOWER MILLING COSTS!



No. 2-20
Milling Machine
Table, 42" x 12"
Table travel, 20"

TWIN POST MOUNTING. Head mounted on two cylindrical ground steel posts which carry spindle midway between them — extra rigidity — an *exclusive* Kent-Owens feature!

Kent-Owens builds 'em *rugged* . . . *simple* . . . and *versatile* . . . machines adaptable to countless milling jobs. Designed for rapid, easy set-up and cost-saving operation. Extra rigid head mounting assures balanced load. Greater cutting efficiency with smooth, powerful cutter drive—only two gear contacts, motor to cutter. Write for bulletins on wide range of hydraulic and hand-operated machines. Kent-Owens Machines Co., Toledo, Ohio.

KENT-OWENS

Milling Machines

If you write maker identify as IEN - 7569

Service life increased

60 times with AMPCO* METAL

THAT'S the story of the slide blocks used in Zig Zag Wire Formers. The service is tough —involves high speeds, severe shock loads. Roller bearing assembly lasted only four days, ordinary bearing bronze less than a month.

As a result, 25 Ampco Metal parts are used in the Zig Zag Wire Former. The company reports that in five years no Ampco Metal part has been replaced or adjusted in any machine.

Mr. Harry H. Norman, Chief Engineer of the Zig Zag Spring Company, Los Angeles, California, says that the long-wearing properties of Ampco Metal have contributed substantially to the success of their Spring Former.

Take a look at your wear problems. Perhaps Ampco Metal is the low-cost solution. Consult your nearest Ampco field engineer or write us for further information.

AMPCO B-9A

AMPCO METAL, INC.
Milwaukee 46, Wisconsin
West Coast Plant: Burbank, California
*Reg. U. S. Pat. Off.

IT'S PRODUCTION-WISE TO AMPCO-IZE!

If you write maker identify as IEN - 7570

Inductrols ... via Graybar

Undervoltage cuts equipment output and efficiency . . . ups maintenance costs. Overvoltage shortens equipment life . . . increases manufacturing and replacement costs. But by using G-E Inductrols on secondary circuits you can automatically maintain correct voltages for all a-c electric equipment. Housed in all-steel cabinets enclosing all live parts, you can install these dry-type regulators anywhere.

FREE 2 bulletins tell complete story of dry-type induction voltage regulators

Application, construction, and operating details on the wide range of standard G-E Inductrols are covered—types for manual and automatic operation . . . single- and three-phase applications . . . units for circuits up-to-and-including 500 kva, 600 volt. Send for your free copies, today. *Graybar Electric Company, Inc., Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*

406-137

Call Graybar *first* for . . . Everything Electrical — Graybar Electric Company

If you write maker identify as IEN - 7571

conform to J. I. C. standards

RUGGED . . .

Where it counts most!

CARTRIDGE . . . metallic rod-wiper, packing, bushing in one unit.

RUGGED BODY . . . all steel end caps and barrel.

PISTON RINGS . . . step-cut joint, long life, minimum leakage.

PRESSURE . . . 2,000 psi heavy-duty . . . 3,000 psi non-shock.

SIMPLICITY . . . no tie-rods . . . no retainer rings.

hydro-line *Manufacturing Co.*

5610 PIKE ROAD • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 7572

... with a Greenlee Hand Bender

Forming small-radius bends without flattening or kinks is simple, speedy work with a GREENLEE Hand Bender. Lets you "custom tailor" your pipe, tubing, and conduit installations right on the job. Especially designed to form neat bends for sharp corners, nooks and other close quarters. Various models and sizes. Write for free Bender Book.

GREENLEE

GREENLEE TOOL CO., 1867 HERBERT AVE., ROCKFORD, ILL.

If you write maker identify as IEN - 7573

"TOOL UP" for your cleaning jobs PREVENT FIRES

with HYPRESSURE Jenny STEAM CLEANER

You'll find a new source of savings and profits, plus greater plant safety, when you "tool up" for cleaning jobs with Hypressure Jenny Steam Cleaner. Jenny removes grease, cutting oils, and protective coatings from machinery, equipment, sub-assemblies, and castings, before repair, repainting or machining—ten times faster than by ordinary methods! It promotes safety by eliminating the fire hazard of greasy conveyor chains and floors, and the use of inflammable cleaning solvents. It cleans ribbed glass windows; keeps floors and runways free of dirt and grease for safer, faster plant traffic, and often reveals damaged or worn parts for repair before production delays or breakdowns occur. Jenny does most any cleaning job for one-tenth the cost of cleaning by hand. So find out how easy it is to bring these savings and safety to your plant.

Send for Catalog today for full facts.

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING CO.
Serving Since 1892

P. O. BOX 85 • CORAOPOLIS, PA.

If you write maker identify as IEN - 7574

MORE HORSEPOWER ...IN LESS SPACE...

with the NEW STERLING *Motor Line*

NEW NEMA MOUNTING DIMENSIONS

KLOSD DRIP-PROOF CONSTANT NORMAL SPEED MOTORS

PLUS...

THESE 10 STERLING ADVANCED DESIGN FEATURES

Over 50% less inactive space	Herringbone rotor
Protected construction	Direct-through ventilation
Greater bearing protection	Increased efficiency and performance
Advanced design terminal box	Stator windings of advanced design
Heavy duty ball bearings	Improved insulation

WRITE FOR NEW BULLETIN NO. G-422-A

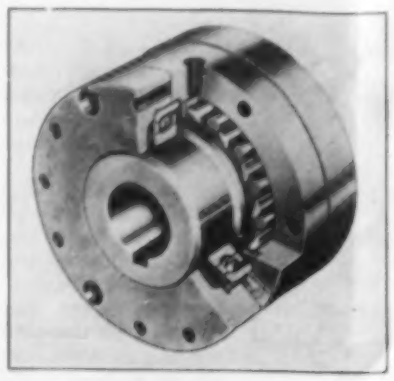
STERLING ELECTRIC MOTORS

New York City 51; Chicago 35; Los Angeles 22; Hamilton, Ont., Canada; Santiago, Chile

If you write maker identify as IEN - 7575

DRIVE .. One way clutch to back stop, index, permit over-run

Source: MORSE CHAIN CO.
7601 Central Ave., Dept. IEN, Detroit 10, Mich.



For general duty

Three sizes, measuring 3½, 4¼ and 5⅝ in. in outside diameter, are included in a new Series-MC line of one-way clutches. The smallest unit measures 2¾ in. in length, has a ⅝-in. standard bore and can be bored to fit shafts from ½ to ⅞ in. in diameter. Its torque rating is 165 ft. lb. in back stop duty, 60 ft. lb. in indexing operation and 120 ft. lb. for over-running duty. It weighs about 6 pounds. The largest unit is 3½ in. in length and can be bored to fit shafts from ¾ to 2 in. in diameter. It rates 545 ft. lb. for back stop, 195 ft. lb. for indexing and 380 ft. lb. for over-running. It weighs about 18 pounds.

Construction includes ball bearings on both sides of the central clutch mechanism to maintain concentricity between the inner and outer races and avoid need for additional bearings to support the ends of shafts that the clutch controls. The outer flanges, on both sides, are threaded to take bolts or studs to attach sprockets, gears, pulleys. The clutch mechanism is an alternate assembly of rollers and cams and energizing springs. The clutch is designed to act as a torque limiting device and slip without galling the outer race or shearing the energizing springs if ultimate torque capacity is exceeded.

If you write maker identify as IEN - 7576

FEEDING .. Vibrating machine weighs out plastic to injection molder

Source: INJECTION MOLDERS SUPPLY CO.
3514 Lee Road, Dept. IEN, Cleveland 20, Ohio

Stays "in step"

Starv-Way trade names a new plastic materials feeder for application on an injection molding machine. The new unit is characterized by its electronic compensator which is actuated by the machine plunger to adjust the weight of each shot so the injection plunger will always bottom. The new unit is accurate to within 0.2 gram. as a result of its ability to compensate for variation in bulk factor and plunger position. List price is about $898. Installation and engineering charges are extra.

Operation is on 110-volt 60-cycle ac. The material feeds from a hopper measuring 20 in. in diameter by 22 in. in height. It holds 90 lb. of plastic material, based on styrene. Overall dimensions of the feeder are 14 by 26 by 32 inches. A minimum shot weighs 2 oz. and a maximum shot weighs 32 ounces.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7577

If you write maker identify as IEN - 7578

TRUCK .. Four-wheel trailer operates with a dragline conveyor

Source: LEWIS-SHEPARD
125 Walnut St., Dept. IEN, Watertown 72, Mass.

Carried in stock

Illustrated is the "in-floor" design of the company's new dragline conveyor trailer in which the drag chain is located beneath the floor line and a cam supported pin on the front of the trailer is lowered for drive engagement. A second design employs a chain and hook mechanism in the front of the trailer to engage an overhead chain.

Four load capacities range from 1,400 to 2,000 pounds. Three standard widths are 32, 36 and 40 inches. Four standard lengths are between 40 and 60 inches. The deck stands 7½ in. above the floor. The truck weighs about 250 pounds. Its deck is made of 1⅛-in. tongue and groove hardwood. Deck protection is provided by structural frame on all four sides. The metal wheels are rubber tired and ride on sealed bearings. The swivel casters operate on double rows of balls riding in hardened raceways.

If you write maker identify as IEN - 7579

THERMOSTAT .. For a water heater, mounts two dials to control gas flow

Source: GENERAL CONTROLS CO.
801 Allen Ave., Dept. IEN, Glendale 1, Calif.

Mounts on heater

The upper dial of the two on this new Type G-7 thermostatic control is turned to select "on," "off," and also reset and pilot positions. The lower dial covers the range of temperature selection. Assembly is in an aluminum housing which fits against a water heater. The unit can be employed in connection with any type of gas and in a variety of coupling and burner designs. An optional pilot gas filter, for use with manufactured gas, can be built in. A dual model also is available to permit the use of a high temperature limit switch when desired on equipment.

If you write maker identify as IEN - 7580

Ten combinations of metal and flux, in paste form, for soldering and brazing, are contained in a new experimental kit for use by methods and engineering departments in checking best procedure under given conditions. The materials include mixtures to join electronic components, solder stainless steels, braze electrical contacts, assemble carbide tool tips. There are eight soft soldering alloys in 4-oz. jars and two silver brazing alloys in 2-oz. jars with a dry fuel torch, printed information and instructions. Fusion Engineering, 4504 Superior Ave., Dept. IEN, Cleveland 3, Ohio.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7581

USE THIS NEW SAFETY MATERIAL ALL OVER YOUR PLANT

Safety GRIP-STRUT Pat. Pending

NON-SKID—RUGGED—LOW COST

Safety Grip-Strut is a new basic material. All one piece, steel or aluminum, in various sizes and gauges. Sold like lumber, used like lumber and stocked in your storeroom like lumber. Ideal for on-the-job fabricating. Not welded, riveted or expanded. It presents an open space, in a diamond shaped pattern, in excess of 75% of the area for ready access of light and air and gives a positive NON-SKID footing in all directions. Ideal for stair treads, fire escapes, cable trays, work platforms, catwalks, flooring and for original equipment safety treads. Your own mechanics can install it—it's inexpensive, yet permanent and safe.

Write today for new catalog showing loadings and methods of easy application in your plant.

Distributors in all principal cities.

GRIP-STRUT division
THE GLOBE COMPANY
Manufacturers since 1914
4010 S. Princeton Avenue • Chicago 9, Ill.

If you write maker identify as IEN - 7582

STORING . . Rack and lids apply tote boxes as small parts hoppers

Source: CHAS. WM. DOEPKE MFG. COMPANY
8853 Blue Ash Road, Dept. IEN, Rossmoyne, Ohio

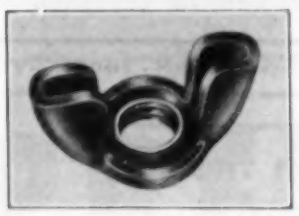
Mounts on bench

Hopper Rack designates this new rack assembly of the NesTier materials handling boxes, previously described IEN-14115-53, to hold small parts for assembly and production operations. Lids apply on the boxes as shown in the illustration. Each lid assembly includes a parts hopper into which the parts stored in the box flow as they are taken out. When a box has been emptied, it is lifted from the rack and the lid is removed and attached to a full box which then is hung in place of the one taken off. Any number of the boxes can be tiered adjacent to a work station or employed in a storage area.

If you write maker identify as IEN - 7583

FASTENING . . Stamped wing nut available in aluminum, brass or steel

Source: JACOBSON MFG. COMPANY
11 Newark Ave., Dept. IEN, Kenilworth 10, N. J.



Cut threads

Three types of this new stamped wing nut are regular, extra wide and flat. The nut is available in specified standard machine screw threads. Cost is minimized by production in automatic equipment.

If you write maker identify as IEN - 7584

PRESS . . Bench type inclinable rates 7½ ton, has 1½ in. stroke

Source: KENCO MFG. COMPANY
5211 Telegraph Rd., Dept. IEN, Los Angeles 22, Calif.

Floor legs to order

New press mounts a 100-lb. flywheel on two roller bearings, provides a 1½-in. standard stroke with controls for either single action or continuous operation upon positioning a lever. Shut height is 7¾ in. with the ram down and the adjustment up. The bolster plate measures 7½ by 11 inches. The tool steel heat treated crankshaft is mounted in bronze bearings in the cast iron frame.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7585

AN 659 TERMINALS
Prompt Delivery
Buy
Sherman®

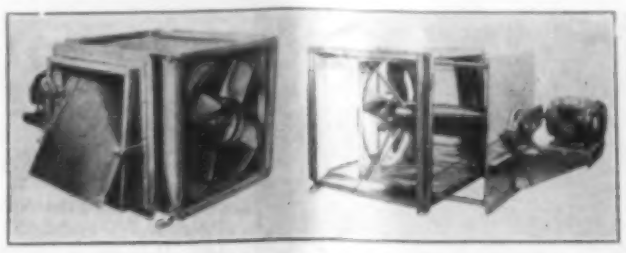
Sherman terminal lugs to AN659 Specifications for No. 8 to 4/0 Cable sizes are now being manufactured for prompt delivery. Contracted from higher grade electrolytic copper, electro tinned, marked with wire size and "Sherman" Trade Mark. Write Dept. E.E. today for full information.

H. B. SHERMAN
MANUFACTURING CO.
BATTLE CREEK • MICHIGAN

If you write maker identify as IEN - 7586

BLOWER . . Motor driven assembly for induced draft, 980 to 19,500 cfm.

Source: L. J. WING MFG. COMPANY
Vreeland Mills Road, Dept. IEN, Linden, N. J.



Bulletin DI-SA-54

Self-contained removable assembly of impeller and insulated tube, factory lubricated ball bearings and belt connected tension adjustable motor characterize the construction of this new design in the company's line of induced draft blowers. At the same time, the rectangular housing into which the operating mechanism slides is fitted with interchangeable side panels to meet given inlet and outlet connection requirements. Square flanges are provided at both inlet and outlet and a barometric damper can be installed as shown to the left in the illustration.

Five basic sizes mount connection flanges measuring 14 to 39 in., in inside width and height, by 17 to 41 in. in outside width and height. A fan in the insulated tube assembly, through which the blower shaft extends, maintains a continuous stream of cool air over the two bearings. Because of the unit assembly of the operating mechanism, there is no alignment problem in service.

If you write maker identify as IEN - 7587

TACHOMETER . . Three range electric, for readings from 2 to 100,000 rpm.

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Also 2 to 10,000 fpm.

A rotating head, to be placed against a moving object, and an indicator are attached by a 2-ft. flexible electric cable to make up the assembly of this new tachometer. The indicator mounts three scales that are selected by rotating a knob at the housing end of the handle. The rotating action brings one or another of the scales into view beneath the pointer. The assembly weighs 3¾ lb., including the carrying case which measures about 11½ by 7¼ by 3¾ inches.

The rotating head operates a set of contacts through a positive cam mechanism. The assembly weighs 6 oz. and is small enough to enter into confined locations. The indicator employs a reactance circuit and a milliammeter with a flash light cell power supply. The cell has a service life of two to three years. Changes in voltage are compensated for by a self-contained circuit. The tachometer is available with accessories including two external cone tips, an internal cone tip, an 0.1 ft. disc, a 1-ft. disc, low and high speed adaptors and an extension arm.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7588

If your problem is high speed coating of paint, varnish, glue, latex, etc. — POTDEVIN, with sixty years experience in coating equipment design is sure to come up with the solution.

Illustrated is just one of hundreds of special machines. It automatically labels cylindrical paper tubes. Hundreds of machines available that were designed for special industry applications.

Let us know your problem. We either have or will build the machine for you.

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Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling

If you write maker identify as IEN - 7589

THE HAMILTON
PORTELVATOR®
(Portable Elevating Table)

MAKES IT *Easy* TO LIFT • LOWER LEVEL • TRANSPORT LOADS UP TO 5,000 lbs.

3 TABLE SURFACES Can be worked at from **ALL 4 SIDES**

Slow or fast lift.

Self locking at any height.

4 POINT SUPPORT (table can't tip)

Lift mechanism can be operated from either end.

Turns easily on anti-friction casters. Positive floor lock.

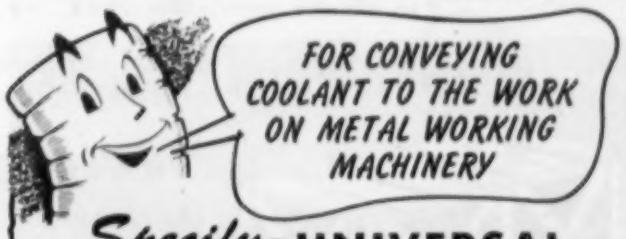
WELDED CONSTRUCTION

*THREE STANDARD MODELS TO CHOOSE FROM

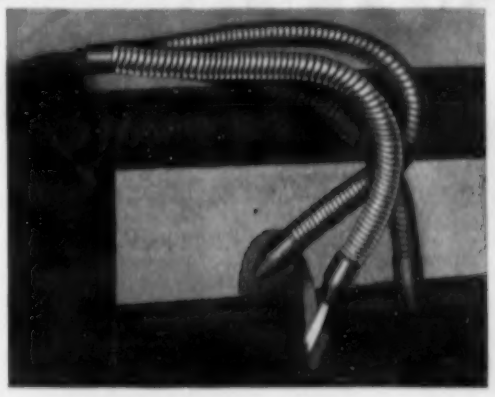
FREE BULLETIN
Write The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio. Ask for Bulletin No. 5412.

IT'S A Hamilton Tool
USE IT WITH CONFIDENCE

If you write maker identify as IEN - 7590



***Specify*- UNIVERSAL**
FLEXIBLE STEEL COOLANT NOZZLES



STANDARD ASSEMBLIES available from stock: ⅛", ¼", ⅜", ½", ¾", male one end, nozzle other end. 6", 9", 12", 15", 18", 24", 30", 36" lengths. Intermediate or longer lengths made to order.

Write for Schedule U-55 for complete data

UNIVERSAL METAL HOSE CO.
2131 South Kedzie Avenue Chicago 23, Illinois

If you write maker identify as IEN - 7591

JOHNSON wide-rehandling clamshell

EASY-CLOSING big-diameter sheaves, with sealed-in needle bearings, reduce friction losses, deliver full power to cutting lips. Light weight, sturdy bucket assures big payload performance in loose materials.

ALL-WELDED smooth, fast cleaning. Hard manganese cutting edge welded to lips toughens with use. 10 Wide Rehandling sizes: ⅜ - ½ - ¾ - 1 - 1¼ - 1½ - 1¾ - 2 - 2½ and 3 cu. yds.

Other Johnson types: General-Purpose and Heavy-Duty Digging.

MAIL TODAY

to: C. S. JOHNSON Co. CHAMPAIGN, ILLINOIS *(Koehring Subsidiary)*
Send complete facts on ____-cu. yd. Wide-Rehandling Clamshell Bucket.
NAME ____
COMPANY ____
STREET ____
CITY, STATE ____ 1242 IEN

If you write maker identify as IEN - 7592

If you write maker identify as IEN - 7593

ENGINEERED CONTAINERS FOR EVERY SHIPPING NEED

General Box

1815 Miner Street, Des Plaines, Illinois

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If you write maker identify as IEN - 7594

SYNCHRON® TIMING MOTOR

"Work Horse of the Industry"

SINCE 1926

Every SYNCHRON Timing Motor must undergo 51 inspections and a grueling final test before shipment! Long-lasting accuracy and dependability are built in!

Invitation to Designers

If your product requires trouble-free synchronous timing motors or timing machines, get complete, concise engineering data showing how easily SYNCHRON Motors may be applied to mechanisms now in production or in the idea stage.

Consult HANSEN engineers without obligation.

SYNCHRON Timing Motors start instantly, pull up to 8 in. oz. at 1 RPM, operate in any position at temperatures from -40° to +140° F. Available with gear trains to convert any speed.

HANSEN MFG. CO., Inc., PRINCETON, IND.

HANSEN MANUFACTURING CO., INC., PRINCETON 2, IND.
Send catalog and engineering data to:
Name
Firm
Address
City Zone State

If you write maker identify as IEN - 7595

INSULATING . . Teflon tube for wire insulating and color coding

Source: POLYMER CORPORATION
438 Walnut St., Dept. IEN, Reading, Pa.

Polypenco teflon

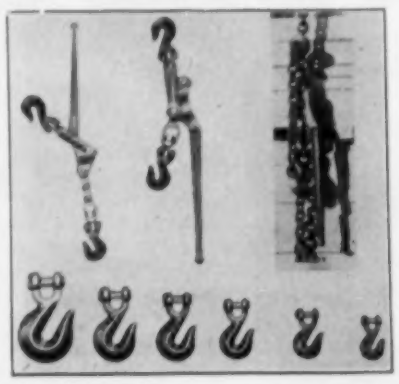
Sizes range from No. 24 to No. 28, AWG, for this new Polypenco teflon "spaghetti" insulating tube. It is supplied on reels in lengths of 100, 200, 500 and 1,000 feet. It is cut to short pieces for application on terminal leads such as those shown in the illustration.

The material remains stable at temperatures to 525 deg. F. It will not melt, burn or decompose while lying close to a connection that is being soldered. It combines high surface resistance and thermal stability. Dielectric strength ranges from 900 to 1,000 volts per mil based on a normal safety factor. Moisture absorption is negligible. The material is resistant to attack by chemicals. It is fungus proof and weather resistant. Colors are black, blue, brown, green, red, natural white and yellow.

If you write maker identify as IEN - 7596

JACK . . Toggle load binder takes interchangeable clevis hooks

Source: THOMAS LAUGHLIN COMPANY
71 Fore St., Dept. IEN, Portland 3, Maine



Applies on user's chain

The swivel tongue in this new drop forged load binder swings on a pin inside the jaw so any force under pressure is directed inward rather than out. This design makes it impossible for a heavy pull to spread the jaw. The handle itself is an integral part of the unit and cannot loosen. A positive camlock prevents the binder from opening when the load is bound. The complete assembly is made of heat treated steel.

Two binder sizes take six chain sizes by interchanging hooks. Thus one binder takes hook sizes from ¼ to $\frac{7}{16}$ in. and the other takes hook sizes from ⅜ to ⅝ inch.

If you write maker identify as IEN - 7597

Cross section paper, for chart making, is available from Chart Production Co., 278 Madison Ave., Dept. IEN, New York 16, N. Y., in which the significant lines are ruled in red and intermediate lines in blue. The latter screen out when the chart is reproduced. Several sizes and styles are offered.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7598

SAME HUB FITS "QD" V-BELT SHEAVE

Speed changes are simplified and "spare" sprockets can be carried more easily.

If your favorite distributor doesn't stock this new item, tell him about it. He'll reward you with better service.

"OFF THE SHELF" SERVICE AVAILABLE FROM INDUSTRIAL DISTRIBUTORS

Reboring of stock bore sprockets to fit various shafts is eliminated due to the various bores available in the QD hub. Installation and removal from the shaft is made easy by the tapered fit of the hub and sprocket. Hub assembly grips the shaft equivalent to a "press fit."

Catalog explaining additional advantages and construction details will be furnished on request.

OTHER FORT WORTH PRODUCTS
V-BELT DRIVES
SCREW CONVEYORS and ACCESSORIES
SCREW ELEVATORS
INDUSTRIAL FANS

FORT WORTH STEEL AND MACHINERY CO
DEPT. 27, 3600 McCART, FORT WORTH, TEXAS

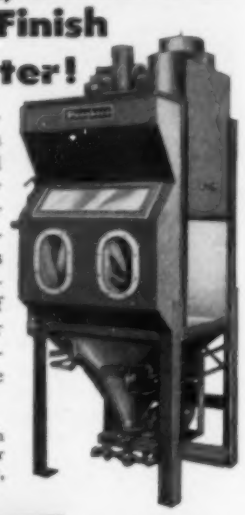
If you write maker identify as IEN - 7599

BEFORE

Mold cleaned and finished by Pangborn Hydro-Finish in minutes!

AFTER

Pangborn Hydro-Finish cleans better—faster!



Molds, dies, tools—Pangborn Hydro-Finish cleans them quickly, leaves them bright and ready to use! Hand cleaning and polishing is practically eliminated! And production is further speeded up because Pangborn Hydro-Finish, operated by one man, removes scale and discoloration in minutes instead of hours. In addition, the use of fine mesh abrasives suspended in water gives you a precision job . . . holds tolerances to .0001" . . . protects delicate equipment.

GET COMPLETE FACTS on Hydro-Finish and how it can save *you* money! Write for Bulletin 1400A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

Pangborn

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BLAST CLEANS CHEAPER
with the right equipment for every job

If you write maker identify as IEN - 7600

It's all in the Heat Treatment

Tough heads eliminate spalling.

Special Hammers not required to make stamps safe.

Originators of Super Safe and Safaloy Stamps

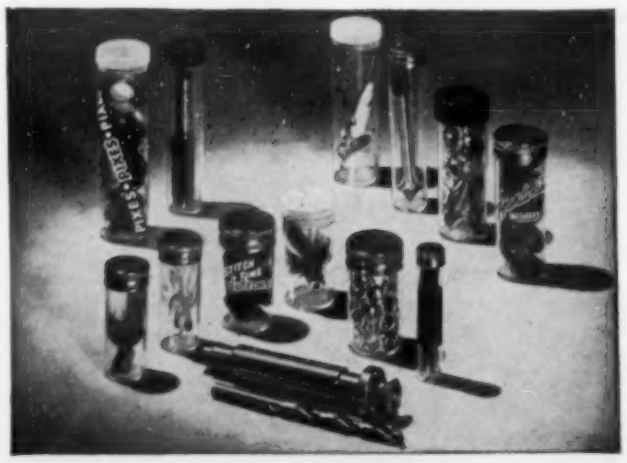
WRITE FOR INFORMATION AND PRICES

We specialize in rugged stamps for steel mill use.

Our roll cutter tools outlast all others.

PITTSBURGH STENCIL & TOOL COMPANY
REEDSDALE and SCOTLAND STREETS
PITTSBURGH 12, PA.

If you write maker identify as IEN - 7601



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Package your products in Lermer Plastic durable, handsome containers. They are shatterproof, 75% lighter than glass, available clear or opaque in many colors, can be printed or decorated and are available with metal or plastic closures. Write for complete catalog information and samples. If possible, send along products for particular suggestions.

LERMER PLASTICS, INC.

Pioneers and Specialists in Plastic Containers

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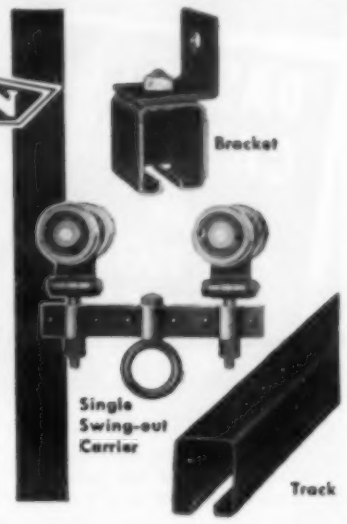
If you write maker identify as IEN - 7602

COBURN



OVERHEAD CONVEYING EQUIPMENT

simple, easy installation

Coburn track, brackets and carriers are simple in design . . . present no complicated installation problems. In fact, your own plant personnel can easily handle the job. Inexpensive re-arrangement or extension can also be made at any time because of the section design of Coburn Overhead Monorail.

Write for Catalog #220 to Coburn Sales and Engineering, 56 Sterling Street, Clinton, Mass.

THE COLORADO FUEL AND IRON CORPORATION • Denver and Oakland
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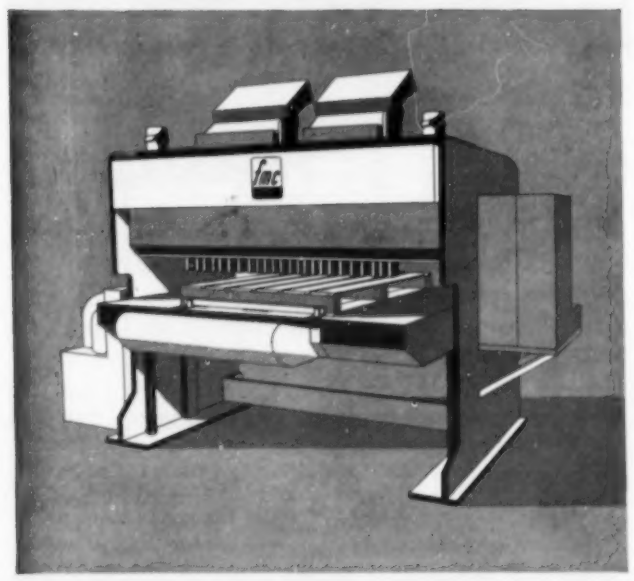
COBURN PRODUCTS
PRODUCTS OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 7603

PREVUE OF NEW PALLET MAKER



NOW YOU CAN MACHINE-NAIL HARDWOOD PALLETS WITH AN fmc SEMI-AUTOMATIC PALLET MAKER

HERE ARE A FEW OF ITS MANY LABOR-SAVING, MONEY SAVING FEATURES...

THE FMC PALLET MAKER IS — An entirely NEW machine designed especially to machine-nail hardwood pallets—not just adapted to this service. It's designed for heavy-duty, continuous-duty operation.

THE FMC PALLET MAKER IS — Massively and ruggedly constructed.

THE FMC PALLET MAKER IS — Easy to install, operate and maintain. Adjustments to different nailing patterns are easily made in matter of seconds.

THE FMC PALLET MAKER HAS—Heavy duty nail chucks to support nails during **complete** length of drive. No bent nails.

THE FMC PALLET MAKER—Drives all nails to required depths; no misses or variables in the FMC positive drive.

The *new* **FMC semi-automatic PALLET MAKER** has many more engineering features that will save you money in machine-nailing hardwood pallets.

Write today for full information.

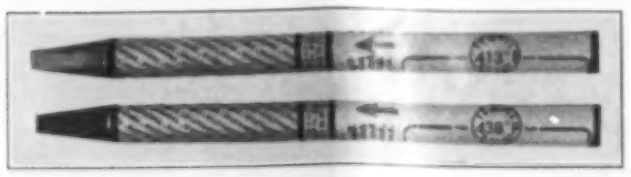
FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION: RIVERSIDE, CALIFORNIA

TRADE MARK

If you write maker identify as IEN - 7605

TESTING . . Heat indicating crayons designed to melt at given temperatures

Source: TEMPIL CORPORATION
132 W. 22nd St., Dept. IEN, New York 11, N. Y.



Accurate to a degree

The company announces availability of its Tempilstik heat sensitive crayons to read 413 and 438 deg. F. These two new ratings apply in the overall line which includes a range from 113 to 450 deg. F. in 12½-deg. F. intervals, from 450 to 550 deg. F. in 25-deg. intervals and from 550 to 2,000 deg. F. in 50-deg. intervals. A liquid smear will show as soon as temperature reaches the rating of the Tempilstik employed to mark a work surface.

If you write maker identify as IEN - 7606

CLEANING . . Granular material for brass and copper electro cleaning

Source: OAKITE PRODUCTS INC.
116-A Rector St., Dept. IEN, New York 6, N. Y.

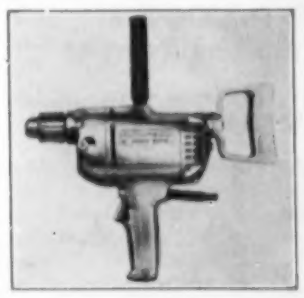
Technical data upon request

Composition 191 is a new free flowing granular material that goes into solution quickly for brass and copper electro cleaning baths. The solution is colorless and has negligible odor. It removes buffing dirt and other common soils. The cleaned work rinses readily in hot or cold water. The solution acts to prevent tarnishing. Recommended concentration starts at 5 oz. per gal., rising a little as the solution ages to compensate for loss due to drag out and carbonation due to carbon dioxide in the air.

If you write maker identify as IEN - 7607

DRILLING . . Portable electric tool rates ½ in. in steel, weighs 10 lb.

Source: PORTER-CABLE MACHINE CO.
46 Exchange St., Dept. IEN, Syracuse 8, N. Y.



Wood to 1⅜ inches

Model 516 is a new electric drill with a 110-volt universal motor to operate the chuck spindle at 550 rpm. The drill rates 64 ft. lb. of torque with a stalled rotor.

Shafts are mounted on ball bearings. Gears have cut helical teeth. The assembly is in an aluminum housing with a removable plate for access to the commutator. Brush holders are accessible from the outside. Spindle offset measures 1⅛ inches. Standard equipment includes the gear chuck, a key, key holder, auxiliary handle, spade handle and a 10-ft. extension cord and plug.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7608

This new 1954 Kinnear catalog gives you full, up-to-the-minute information on how to save maximum space, cut costs, boost efficiency and get more protection at doorways in old or new buildings. In addition to complete data on Kinnear Steel Rolling Doors, with the famous, *Kinnear-originated* curtain of interlocking steel slats—it tells all about Kinnear Steel Rolling Fire Doors, sectional-type Kinnear RoL-TOP Doors, and the protective Kinnear Steel Rolling Grilles. Write for FREE copy!

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FACTORIES
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Columbus 16, Ohio
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KINNEAR ROLLING DOORS

Offices and Agents in All Principal Cities

If you write maker identify as IEN - 7609

5414

HOW DO *YOU* THREAD A PRECISION HOLE?

If your operation involves precision threading of precision holes, meet the

HAMILTON SMALL HOLE SUPER SENSITIVE PRECISION TAPPING MACHINE

Handles the smallest and finest tap to 10-32 inclusive.

Spindle idles in reverse, changes rotation instantly as pressure is applied to tap, reverses instantly as pressure is released.

Taps to the very bottom of blind holes without risk of tap breakage.

WANT COMPLETE FACTS?

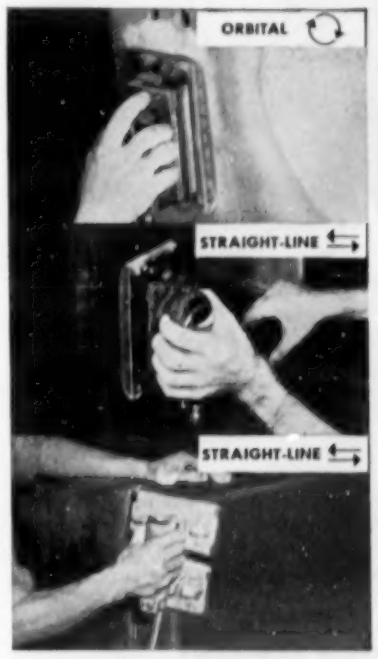
Write for FREE Hamilton Bulletin No. 5414. Address The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio.

IT'S A *Hamilton Tool*
USE IT WITH CONFIDENCE

If you write maker identify as IEN - 7610

Sundstrand Air Sanders for every finishing operation...

SUNDSTRAND



MODEL OS-700 . . . new, fast-action orbital air sander. Speeds up to 6000 cycles per minute for *fast material removal*. Sands to moldings and edges . . . won't bounce off. Built-in water attachment. Can operate on only 50 lbs. of air. All-metal construction. Weighs just 4½ lbs.

MODEL SP-101 . . . versatile, straight-line machine for *fine finishing*. Straight-line motion eliminates scratch marks . . . allows sanding up to edges, moldings. Built-in water attachment. Palm lever controls air and water. Counterbalanced parts.

MODEL 1000 . . . light, fast, easy-to-handle, two-pad machine. Generous abrasive area reduces time . . . makes sander ideal for large-area sanding. Pad speed 2,500 oscillations per minute. Weight 7½ pounds. Palm lever control. For dry or wet sanding.

SUNDSTRAND MACHINE TOOL CO.
Pneumatic Division, Rockford, Illinois

SUNDSTRAND

A name to remember in **AIR SANDERS**

If you write maker identify as IEN - 7611

SHOP DETECTIVE at work!

SEE what the PROFILOMETER can disclose about *your* production operations—SEE how it measures surface roughness, on parts that *you* select — and FIND OUT how helpful that can be, in unexpected ways. *A demonstration will tell you, IN YOUR PLANT* — with no obligation on your part.

FREE BULLETIN LT90 describes our demonstration service — tells what we do, how long it takes, and why you'll find it interesting. WRITE TODAY for your copy!

Profilometer is a registered trade mark.

MICROMETRICAL MANUFACTURING COMPANY
345 S. MAIN STREET • ANN ARBOR 1, MICH.

If you write maker identify as IEN - 7612

MARSH MAKES IT!

If it's a pressure gauge or dial thermometer, Marsh makes it . . . and makes it better. The types, ranges and case styles are endless. What is "special" to other instrument makers is often standard to Marsh. To know the scope of Marsh instruments—

Write for this fact-filled catalog

MARSH INSTRUMENT CO.,
Sales affiliate of Jas. P. Marsh Corporation,
Dept. A, Skokie, Ill., *Export Dept.*, 3501 Howard St., Skokie, Ill.

If you write maker identify as IEN - 7613

...and a "Steal" at its Price!

PIC STEEL UNIONS* are priced *right*. They cost less than a galvanized, no more than a black malleable union. Yes and here's what you get for your money:

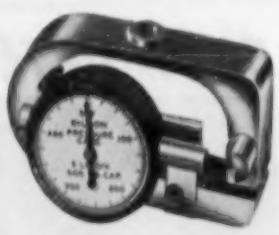
- 100% zinc plating — even threads are zinc plated to combat rust
- Easy installation — ends are uniformly flat-sided, uniformly parallel of heavy steel pipe coupling stock
- Tight seal — due to special wedge type bronze seat
- Good looks and strength — ideal for original equipment

**For 150# Service — Write for FREE Samples*

DART UNION COMPANY
130 Thurbers Avenue, Providence 5, R.I.
The Fairbanks Co. — Distributors
Boston • New York • Pittsburgh • Rome, Ga.

If you write maker identify as IEN - 7614

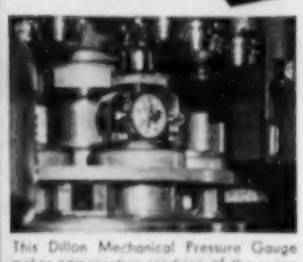
DILLON Mechanical PRESSURE GAUGE



This compact instrument will accurately measure pressure or compressive loads in very small spaces—will flex millions of cycles without losing its resiliency. Sustains 25% accidental overload. Measures pressure in vises, hydraulic presses, spot welders, etc. Jeweled dial indicator for extreme accuracy. Range capacity to 5000 lbs. Low cost.

Send today for illustrated catalog.

IDEAL FOR USE WHERE SPACE IS LIMITED



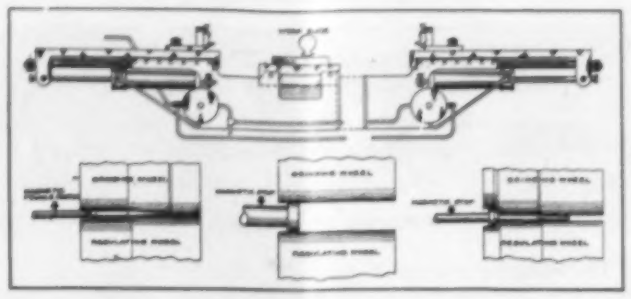
This Dillon Mechanical Pressure Gauge makes comparative readings of the spring pressure exerted against the bottom of tin cans by the base plate in a can seaming operation. Thus, the operator can tell if all base plates exert uniform pressure in each seaming station.

W. C. DILLON & CO., INC.
14620K Keswick St., Van Nuys (*Suburb of Los Angeles*), California

If you write maker identify as IEN - 7615

GRINDING . . Hydraulic fixture to hold work on a centerless machine

Source: MODERN DEVICES
Box 429-F, Dept. IEN, Libertyville, Ill.



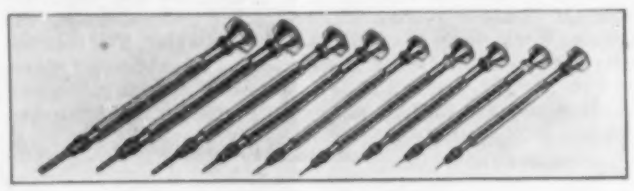
Trade named Scram

New combination of hydraulic fixture and magnetic work stop makes it possible to present multiple-diameter work to the wheel in a centerless grinder, to grind it accurately to size on all diameters and shoulders with a shaped wheel, and then to retrieve it for removal to make room for new work. Square and tapered shoulders, straight and tapered work bodies can all be handled. The company is prepared to supply technical advice and to tool the machine for specified work.

If you write maker identify as IEN - 7616

SCREW DRIVING . . Miniature tools with collet held blades for fine work

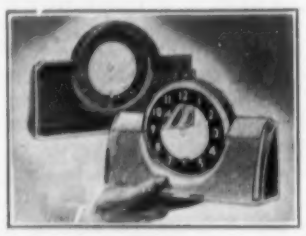
Source: LOUIS LEVIN & SON INC.
3610 S. Broadway, Dept. IEN, Los Angeles 7, Calif.



Double end blades

The blades in these new screw drivers are reversible in their holding collets and can be purchased separately for replacement. Nine blade sizes range from 0.016 to 0.094 inch. The tools can be purchased as a complete set of nine or in sets of three. Ferrules are color coded to indicate size. Sets of three list at $1.35 to $2.25 depending on size. The complete set lists at $4.95. Extra blades are 15 cents each. The tools are made of steel, hardened and chromium plated.

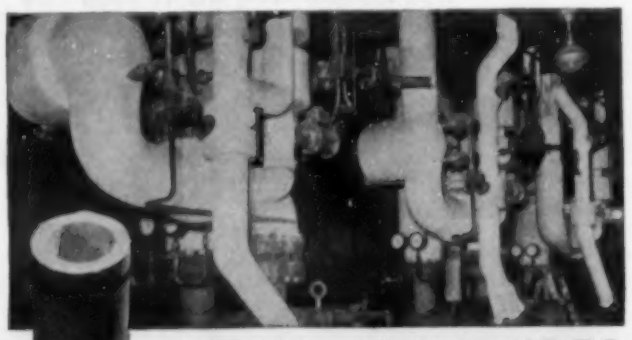
If you write maker identify as IEN - 7617



Appliances are employing decorative escutcheons made of glass, according to Lancaster Lens Co., W. Main St., Dept. IEN, Lancaster 1, Ohio. Color combinations are unlimited. A single custom molded part can include areas that are opaque, translucent, transparent. Cost is not excessive. The glass is easy to clean. It resists heat.

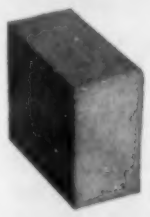
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7618



HEAT + MOISTURE?

use Calsilite insulation



Ruberoid's molded calcium silicate insulation withstands a soaking heat indefinitely up to 1250°F. It is not soluble in water, normal acids or alkalis. Moisture won't affect its efficiency or appearance. Calsilite, in pipe covering sections and flat blocks, offers single layer efficiency and application economy. Get all the facts. Write The Ruberoid Co., 500 Fifth Ave., New York 36, New York.

Send for Calsilite Data Folder

The RUBEROID Co.
Asphalt & Asbestos Building Materials

If you write maker identify as IEN - 7619

DARNELL CASTERS & E-Z ROLL WHEELS

ECONOMY and EFFICIENCY

STRING GUARDS...
Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

RUST-PROOFED...
by the Udylite process, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

RUBBER TREADS...
a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

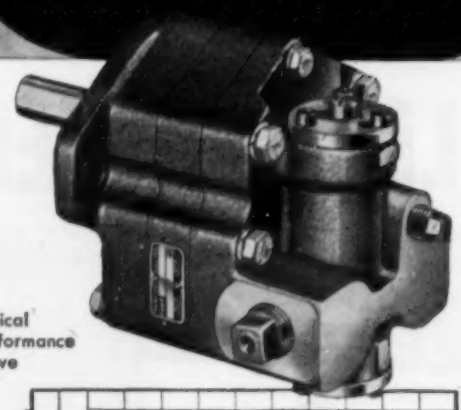
LUBRICATION...
all swivel and wheel bearings are factory packed with a high quality grease. Zerk fittings are provided for easy lubrication.

Write for Free Darnell Manual

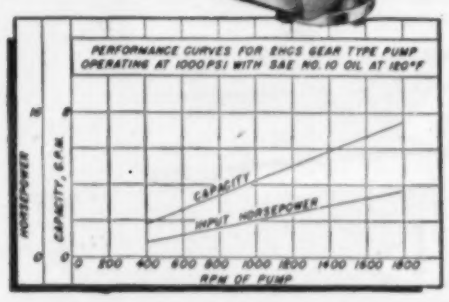
DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 7620

For Proven Performance and Lowest Cost
Check the Webster Line of Hydraulic Pumps



Typical Performance Curve



- It will pay you to get the facts about WEBSTER Gear-Type Hydraulic Pumps before buying *any* pump. Here is a *complete line* of rugged, dependable pumps from 10 gph. to 10 gpm., engineered to operate efficiently at pressures up to 1200 psi. at speeds of 3600 rpm. or less—90 pumps of various designs and capacities to meet the widest range of requirements!

WEBSTER pumps are the product of skill acquired during nearly a quarter-century of experience. They have established an enviable reputation for efficient, dependable operation.

All WEBSTER pumps lend themselves readily to many forms of adaptation—and to modification for special installations. All are available with built-in relief valve, if desired.

Whenever you require pumps for lubricating, oil circulating, filtering, transfer or quiet hydraulic power applications, we invite your inquiries.

***Write** today for catalog which includes pump data sheets on which you can describe your requirements*

OIL HYDRAULICS DIVISION
WEBSTER ELECTRIC
RACINE, WISCONSIN
ESTABLISHED 1909
"Where Quality is a Responsibility and Fair Dealing an Obligation"

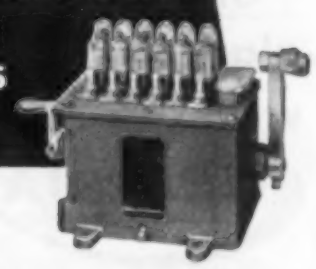
MANUFACTURERS OF A COMPLETE LINE OF OIL HYDRAULIC PUMPS

If you write maker identify as IEN - 7622

For Positive Automatic Machine Lubrication use

HILLS-McCANNA

FORCE FEED LUBRICATORS



● Hills-McCanna Force Feed Lubricators are specially designed oil line pumps that provide a positive automatic flow of oil to even the most difficult-to-lubricate spots. Available in open or enclosed types in sizes from 2 to 32 pints with 1 to 48 feeds. Oil flow through the lubricator is exactly controllable to meet your specifications. For complete information, write for catalog L-52. Hills-McCanna Co. 2347 W. Nelson St., Chicago 18, Ill.

HILLS-McCANNA

force feed lubricators

Also manufacturers of Saunders patent valves • chemical proportioning pumps • magnesium alloy sand castings.

If you write maker identify as IEN - 7623

The Quaker Oats Co., St. Joseph, Mo. This is one of several Quaker Oats plants which are protected by **Uniflex Aluminum Roof Coating**, a product of The Acorn Refining Co., Cleveland, Ohio. Uniflex is guaranteed for five years.

QUAKER OATS CO. improves storage and working conditions with ALUMINUM ROOF COATING

Quaker Oats is typical of the many large corporations which recognize the advantages of asphalt aluminum roof coatings. They find that aluminum roof coating not only waterproofs roofs but insulates as well. Quaker Oats has been able to lower inside, summer temperatures substantially, thus improving the protection of food products in storage and increasing efficiency of workers.

Asphalt asbestos aluminum coatings can be applied with an ordinary roofing brush or spray gun . . . come ready mixed . . . require no thinning or heating. They protect roofs against leakage, insulate them, and by reflecting the sun's rays, greatly reduce roof surface temperatures. Result: greater comfort and work efficiency in factories, offices or schools . . . lower power and water bills for refrigeration plants, food lockers, milk coolers . . . lower evaporation losses from oil or gasoline tanks. **ALCOA does not make roof coatings.** But we will gladly refer you to reputable manufacturers who do. Write today.

FREE BOOK
full of ideas you can use

Contains important information on proper application and selection of aluminum paint. Answers many industrial painting questions.

Write for your free copy today.

PAINT SERVICE BUREAU
ALUMINUM COMPANY OF AMERICA
1787-G Alcoa Building
Pittsburgh 19, Pa.

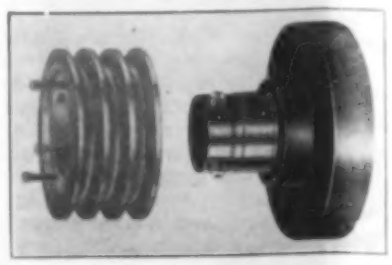
ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

If you write maker identify as IEN - 7625

DRIVE . . Centrifugal clutch permits engine or motor to start free

Source: SALSBURY CORPORATION
1161 E. Florence Ave., Dept. IEN, Los Angeles 1, Calif.



Mounts on engine shaft

Series 600 designates new design of the company's centrifugal clutch for application on gasoline engines rating 3 to 10 hp. and motors rating 2 to 5 hp. **The centrifugal mechanism grips** and releases a friction lining on the inside face of the driven drum. It stands released when the engine or motor is idle and does not engage until the drive is near its full speed. Then it picks up the load smoothly.

Application can be made on shafts measuring 1 or 1⅛ in. in diameter. A range of detachable sheaves and sprockets is available to meet given drive requirements.

If you write maker identify as IEN - 7626

FLOORS . . Emery aggregate to surface harden fresh concrete

Source: WALTER MAGUIRE CO.
60 E. 42nd St., Dept. IEN, New York 17, N. Y.

Technical data in Bulletin SH-1-54

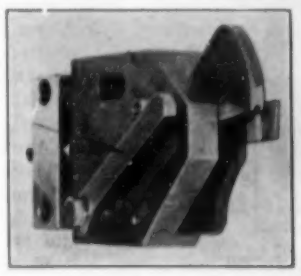
Emery aggregate Type SH is a new shaped, sized and graded dry material to produce an anchored mat of emery on a floor. The material is packaged dry in 100-lb. bags and is mixed dry with cement, at the job, in the ratio of four bags of the material to one bag of cement. This mixture is applied evenly to fresh concrete just as the concrete reaches its final set. Approximately 100 lb. of the material, not including the dry cement, are recommended for 100 sq. ft. of floor surface.

The hardener and cement are power floated or troweled into the concrete surface and then the completed floor is permitted to cure. Addition to the concrete prolongs the life of medium duty floors. It presents a non-slip surface either wet or dry. It makes the floor dense and also prevents dusting.

If you write maker identify as IEN - 7627

LATHE TOOL . . Combination unit to mark and cut off in a screw machine

Source: NEW METHOD STEEL STAMPS INC.
147 Jos. Campau St., Dept. IEN, Detroit 7, Mich.



Model 700

Segment die, with an integral starting cam, and a cutoff blade are assembled in a holder in this new combination lathe tool. Marking can be performed at any point in a screw machine cycle on work that positions the marking at a final diameter. Marking is followed immediately by cut off in the tool shown in the illustration.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7628

A PAID NEWS ADVERTISEMENT BY SEATING, INC.

CAFETERIA SEATING . . . new table design permits quick storing in less space

Sico Tip-Top

Combination of table-and-bench service with folding action for storage ease is a feature of the Sico Tip-Top table designed for industrial use by **Seating, Inc.,** national manufacturers of seating equipment in Minneapolis, Minnesota.

Full mobility with casters and all-over plastic protection for the table top are additional features of the unit, which seats up to eight adults and incorporates a new functional design for one-leaf industrial tables. When not in use, the table top tips over to vertical position for storage in an area less than 12" wide. Unfolded, the table has a surface area of 15 square feet.

Frame construction is of 1" 14-gauge structural steel tubing, zinc lustron plated for lasting protection and beauty. Table requires no locks or catches to operate. Benches are made of 1-1/16" vertical grain fir with natural finish.

The Sico Tip-Top table is designed as both a work table and for use in employee lounges and cafeterias. Construction and materials suit it equally as well for outdoor use where required.

For literature and price information on the Tip-Top table, write **Seating, Inc., 6045 Pillsbury Ave., Minneapolis 19, Minnesota.**

If you write maker identify as IEN - 7629

5417

This GEAR HOBBER delivers *EXTRA* PRECISION

The Hamilton Precision Gear Hobber generates small, fine pitch gears to 6" O.D. of the gear blank. Alignment and trueness of all spindles held to less than .0002".

WHAT'S MORE

Independent selection of speed, feed, and indexing speeds machine set-up and provides a means for matching cutting speed and work feed to the material being machined.

WANT ALL THE FACTS?

Write for Hamilton Bulletin No. 5417. Address The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio.

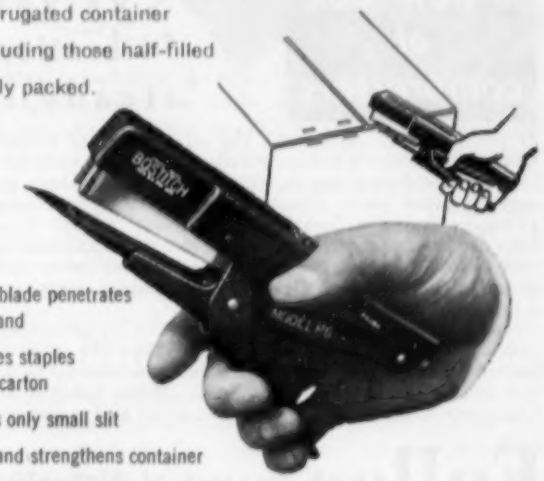
IT'S A *Hamilton Tool*

USE IT WITH CONFIDENCE

If you write maker identify as IEN - 7630

New Bostitch Stapling Plier with a Pointed Blade

For fastening almost any cardboard or corrugated container including those half-filled or loosely packed.



- Sharp blade penetrates easily and
- Clinches staples inside carton
- Leaves only small slit
- Seals and strengthens container

FASTEN IT BETTER AND FASTER WITH

BOSTITCH
STAPLERS AND STAPLES

For a free demonstration call your local Bostitch representative. He's listed under "Bostitch" in your telephone directory. Or write:
Bostitch
647 Mechanic St.
Westerly, R. I.

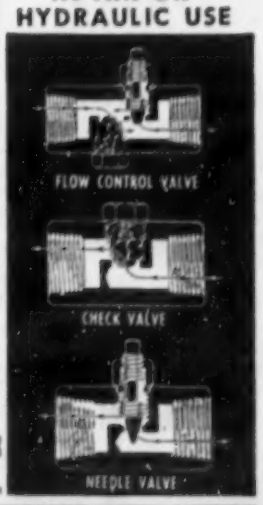
If you write maker identify as IEN - 7631

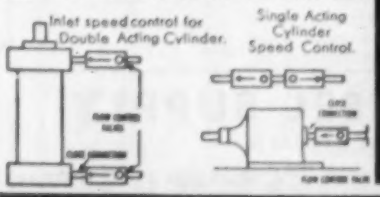
Get Easier, More Accurate Cylinder Speed Control with *Pneu-Trol* VALVES IN AIR OR HYDRAULIC USE

2000 and 5000 (steel) P.S.I.

Pneu-Trol Valves combine in a short, compact body, a tapered fine thread needle for extremely accurate air or oil flow control and a floating retro ball check, which permits full flow in the opposite direction. Retro ball floats in most sensitive position to seat, requiring only a slight differential pressure to fully open or close it. Check Valve and Needle Valve incorporate single function features of Flow Control Valve. All valves available in 5 female pipe sizes — ⅛" to ¾". Valve bodies are made from brass, aluminum, steel or stainless steel. Attractive Prices — Immediate Delivery.

Write for Illustrated Circular and Price List.





Pneu-Trol Devices, Inc.
1438 N. Keating Ave., Chicago 51, Ill.

If you write maker identify as IEN - 7632

This Borium Liner STOPS FAST WEAR in blast cleaning nozzles

Ever hear of BORIUM? It's a man-made metal with diamond-like wear resistance! Used in blast cleaning nozzles, costly wear and fast cut-outs are forgotten. Lasts hundreds of times longer than ordinary cast iron nozzles when cleaning with sand and other common abrasives . . . Saves compressed air, maintains high velocity, keeps a close, tight pattern. You can buy BORIUM NOZZLES in standard types and sizes . . . or we'll furnish special BORIUM Nozzles or Borium Liners made to your specifications. Write for descriptive folder and prices.

STOODY COMPANY
11930 EAST SLAUSON AVENUE, WHITTIER, CALIFORNIA

If you write maker identify as IEN - 7633

a new look at compressors

* simple
* compact
* direct drive
* valveless
* vibrationless
* steady flow

If you've never considered the advantages of Fuller Rotary Compressors and Vacuum Pumps, now is the time to do so. For instance, they can be placed almost anywhere out of the way, because their vibrationless, rotary action permits, for example, balcony installation without heavy foundations. Because they operate by direct drive, you eliminate the initial and upkeep costs, as well as transmission losses incident to gear and belt drives. General maintenance costs are kept to a minimum.

Because Fuller Rotaries compress without reciprocating motion, you get a non-pulsating air stream. They are extremely compact for the volume delivered; sizes to deliver up to 3300 cfm. free air, for pressures up to 125 psig. Write today to the Fuller Company, Catasauqua, Pa. for literature and engineering data.

C-251
9690

Fuller Pioneers of high-efficiency vane-type rotary compressors

FULLER COMPANY, CATASAUQUA, PA.
Branch Offices
Chicago-San Francisco-Los Angeles-Seattle-Birmingham

If you write maker identify as IEN - 7634

WE CARRY COMPLETE BAR STOCKS

- cold finished carbon
- hot rolled alloy
- cold finished alloy
- stainless

• All our warehouses carry a wide range of types, sizes and grades of steel bars. And you can always count on consistent high quality with the bars we carry. Why not simplify your buying by ordering *all* your bar stock from a single dependable source . . . U. S. Steel Supply?

WRITE FOR FREE BOOKLETS NOW

U. S. Steel Supply Division,
208 So. La Salle St., Chicago 4, Ill.
Please send me, without obligation, descriptive literature on the following types of bars:
☐ carbon C.F. ☐ alloy H.R. ☐ alloy C.F. ☐ stainless
Name.....
Firm.....
Address.....
City.....State.....

U. S. STEEL SUPPLY DIVISION

General Offices
208 So. La Salle St., Chicago 4, Ill.

Warehouses and Sales Offices Coast to Coast

UNITED STATES STEEL

If you write maker identify as IEN - 7635

SPRAYING . . Portable equipment to vaporize and deliver insecticide

Source: WEST DISINFECTING CO.
42-16 West St., Dept. IEN, Long Island City 1, N. Y.

Death to bugs

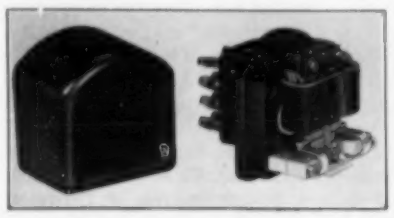
Super Mistorizer is a new wheel mounted motor driven spraying machine to provide residual, contact or localized spraying in critical areas or those normally difficult for access. The equipment employs a compressor and its 1½-hp. driving motor, a 3-gal. insecticide tank and a new pressure feed type of hand spray gun. Mounting is on a two-wheel cart. The double-nozzle head converts the insecticide into a dry mist so finely divided that it will not wet or condense on equipment which it contacts.

One filling, with the company's Vaposector insecticide, is sufficient to "fog" 400,000 cu. ft. of space to control flying insects or 200,000 cu. ft. of space for crawling insects. A one-hour timer permits installing the machine in an area and setting it to operate without need for attention.

If you write maker identify as IEN - 7636

RELAY . . Plug-in polar unit for high speed operation on low input

Source: AUTOMATIC ELECTRIC SALES CORP.
1033 W. Van Buren St., Dept. IEN, Chicago 7, Ill.



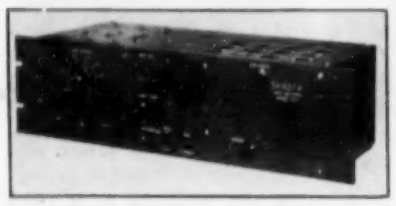
Bulletin 1821

The coil cores and the armature are polarized by a permanent magnet in this new Series PTW relay. Energizing the coils builds up a magnetic field that cuts the permanent magnet field and, since the coils are wound in opposite directions, the polarized armature is attracted by one coil and repelled by the other. Reversing the operating current reverses the action for two-position relay operation.

Applications include impulse repeating, line-current direction indicating or control, differential action in a wheatstone bridge circuit. Overall dimensions are about 2½ by 2¼ by 3¼ inches. The cover is snap-on design. The relay meets speed and sensitivity requirements for teletypewriters.

If you write maker identify as IEN - 7637

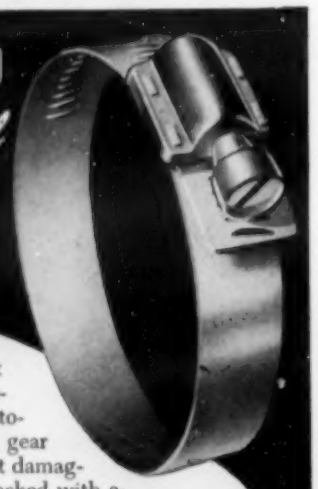
Signals on time and frequency standards, from radio stations WWV and WWVH, are received on the new crystal controlled Model-1201 receiver now available from Beckman Instruments, Shasta Div., Box 296, Station A, Dept. IEN, Richmond, Calif. The receiver has six bands at 2.5, 5, 10, 15, 20 and 25 mc. Selection is made at a panel switch.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7638

How can YOU use *Aero-Seal* HOSE CLAMPS?



• AERO-SEALS — the finest hose clamps made, were designed for aviation and automotive use. Precision worm gear drive tightens evenly without damaging hose or material, stays locked with a never-let-go grip. Stainless steel bands resist corrosion. Application and removal takes mere seconds. Re-usable over and over.

Design engineers, production and maintenance men find AERO-SEALS perfect for many special uses. Your product or plant can use them, too. Available in the widest possible range of sizes. Write for details.

Aero-Seal PRECISION WORM DRIVE HOSE CLAMPS

ANOTHER BREEZE MARK PRODUCT

BREEZE CORPORATIONS, INC. 700 Liberty Ave., Union, N. J.

If you write maker identify as IEN - 7639

VOLTS and AMPS at a glance with the COLUMBIA

NEW LOW PRICE!

$57.50 with Voltage Leads and Carrying Case

A. C. TONG TYPE VOLT-AMMETER

• Quickly • Accurately • Safely

Columbia Type AC-1 provides ampere readings with a snap by merely clamping jaws around the electrical conductor, without breaking circuit or insulation. Voltage readings are taken quickly and easily with safety plug-in leads. This instrument is one of the Columbia line of tong type instruments of the highest quality and dependability.

TYPE AC-1 FEATURES

- Measures up to 600 Amperes and 600 Volts.
- Amperes: 0/12/60/120/-600 A.C.
- Volts: 0/150/600 A.C.
- Convenient Range Switch.
- Insulated Jaws will accommodate Conductors up to 1½" diameter, Bus Bars up to 2" x ½".
- Accuracy: 3% full scale.
- Light Weight—Fits Easily into Pocket.
- High Quality at Low Cost.

Inquiries Invited from Distributors • Write for Descriptive Bulletin AC-19

COLUMBIA ELECTRIC MFG. CO. 4519 Hamilton Ave. Cleveland 14, Ohio

If you write maker identify as IEN - 7640

NEW SHEAR-SEAL VALVE

FLOW DIAGRAM ON HANDLE

Patent Pending

0 to 1500 P.S.I. OIL SERVICE

The simple rugged design of "Shear-Seal" valves pays off in an unbelievably *long service life free from maintenance* of any kind.

The *leakproof* closure of the self aligning, self cleaning valving members actually improves with the lapping action of each operation; *they wear-in, where others wear-out.* They are not put out of commission by dirt or erosion (wire drawing), because *flow is through, never across, sealing members.*

"Shear-Seal" valves provide excellent *throttling* action, *never freeze up, without lubrication* or constant servicing of any kind. Write for catalog 3-G.

BARKSDALE VALVES

5125 ALCOA AVE., LOS ANGELES 58, CAL.

If you write maker identify as IEN - 7641

An Aluminum Paint That Will Stand 1600° of Heat!

Sheffield **Super HOT**

Will Not Chip, Blister, Crack or Peel

A special patented formulation of aluminum paint ready mixed and ready to use! When applied to any metal surface it becomes permanently bonded to this surface upon subjecting it to heat of 500 to 1600 degrees Fahrenheit. Sheffield "SUPER-HOT" adds a protective and decorative finish and also has applications as a "heat plating" process for plumbing fixtures, toys and accessories. The thermo-coupling action sponsored by the application of heat to a "Super-Hot" painted surface makes it impervious to ordinary solvents. May be brushed, sprayed or dipped.

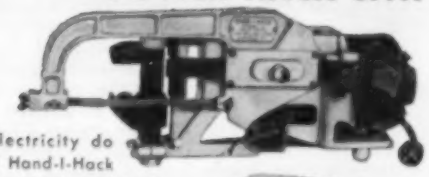
SHEFFIELD BRONZE PAINT CORPORATION
17814 Waterloo Road, Cleveland 19, Ohio

"One of the World's Largest Makers of Paint Specialties"

If you write maker identify as IEN - 7642

Goodbye Elbow Grease!

Use HAND-I-HACK* Portable POWER HACK SAW



TAKE IT EASY—let electricity do your muscle work! Hand-I-Hack eliminates the sweat and fatigue of hack sawing. Plugs into any wall or light socket. Truly portable — can be carried anywhere with one hand. Has swivel vise — operates in any position: horizontally, vertically, at an angle, even upside down. Maximum capacity: 3" x 3" square cut. Uses lower cost standard 10" hand blades — will cut solid bar stock and thin wall tubing, pipe, conduit, cable, rolled forms, etc.

Cutting small diameter brass tubing, using wood block false jaws.

Making a square cut on solid 3" steel bar.

• Write for catalog and name of dealer

*T.M. Reg. U.S. Pat. Off.

Lipe-ROLLWAY CORPORATION
Manufacturers of Automotive Clutches and Machine Tools
812 Emerson Ave., Syracuse 1, N. Y.

If you write maker identify as IEN - 7643

You need U. S. GRIZZLY Uskorona-insulated Power Cables

Here's an illustration showing how ozone can chew up a sturdy, rugged cable. This can never happen with United States Rubber Company's famous Grizzly® Power Cables insulated with Uskorona® compound which prevents electrical failure caused by ozone (Uskorona-1 oil base compound or Uskorona-2 butyl rubber compound). Uskorona meets (and in many ways exceeds) the applicable IPCEA specifications for ozone-resistant rubber insulation.

As the only wire manufacturer that grows its own natural rubber, produces its own synthetics and makes its own plastics (as well as the bulk of its own rubber-compounding chemicals and ingredients), United States Rubber Company is able to make certain that only the finest materials are used in the insulations for its own wires and cables. These materials are expertly compounded according to methods devised after years of research and experimentation in "U.S." laboratories. Finally, U.S. Rubber's practical "know-how" contributes its important part to the uniform high quality of every "U.S." insulation. This "know-how" is the result of 68 years of successful manufacture of electrical wires and cables, and over a century in the making of fine rubber products.

U. S. Grizzly Uskorona-insulated Power Cable, 5,000 Volts, type RR, 3 conductor, shielded, Neoprene jacket.

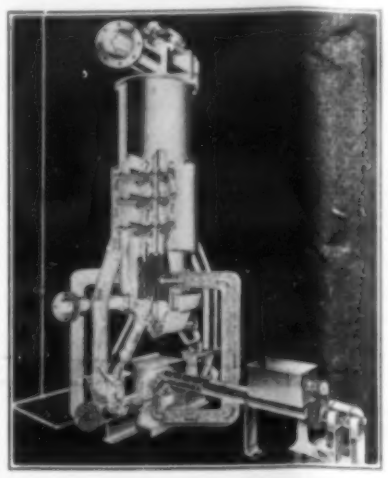
Send for free catalog giving full information about U. S. Electrical Wires and Cables.

UNITED STATES RUBBER COMPANY
ELECTRICAL WIRE & CABLE DEPARTMENT
ROCKEFELLER CENTER, NEW YORK 20, N. Y.

If you write maker identify as IEN - 7645

PULVERIZING . . Jet equipment impinges solid material upon itself

Source: MAJAC INCORPORATED
23rd St. at P. R. R., Dept. IEN, Sharpsburg, Pa.



Built to order

Solid materials such as coal, coke, graphite, gypsum, ore, sand, stone, are reduced to fine powders by passage through this new design of Jet Pulverizing machine. Solid fuels, for example, can be pulverized to a fineness in which 90 per cent will pass through a 200-mesh screen. Precision control is maintained over the degree of fineness and over particle size distribution for concentration of the end product into predetermined percentages of various micron sizes in the product being pulverized.

Improved design of the equipment, previously described IEN-13301-52, includes a new "rock stripper" phase which takes out foreign particles of higher specific gravity than the material on which the machine is working immediately after the material to be pulverized is introduced into the machine. The result is overall acceleration of the pulverizing process.

Materials are introduced through a feeder and are forwarded to the pulverizing zone by a screw conveyor. They move down by gravity to come between two high pressure gas jets that are set opposite to each other. From here they move upward through a motor driven blower. Particles of sufficient fineness continue upward. Heavier particles are returned to the pulverizing zone where they are picked up by the jets and impinged on each other again.

If you write maker identify as IEN - 7646

DOOR OPERATOR . . Pneumatic particularly for refrigeration doors

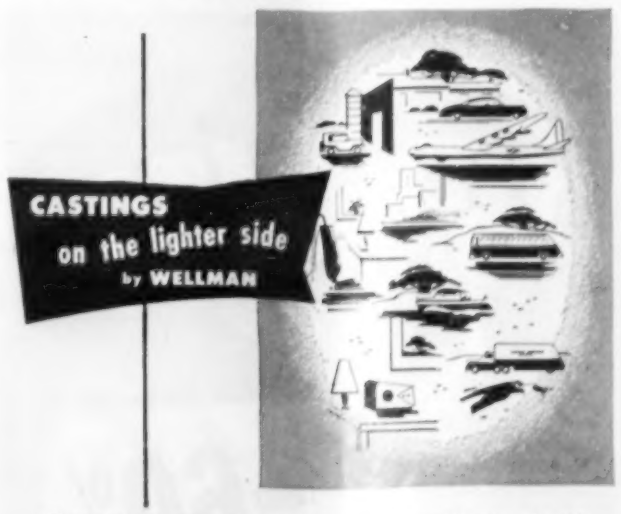
Source: STANLEY WORKS
195 Lake St., Dept. IEN, New Britain, Conn.

For refrigerators

New design of the company's Magic Door Operator employs a bell crank lever attachment. It applies additional pressure against a refrigeration door to hold it against air leakage in closed position. The new assembly suits the standard operator equipment for use on refrigeration doors to open the door, hold it open while workers and materials pass through and then close when the passage way is clear. Control is by means of a pull cord, push button or floor plate. The interval, during which the door is held open, can be adjusted to meet given requirements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7647



Chances are no matter what business you're in, there's a WELLMAN aluminum or magnesium casting somewhere in the picture.

For almost half a century, our four complete plants and experienced personnel have been producing castings on the lighter side to meet many requirements.

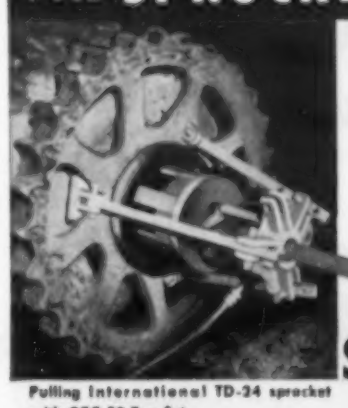
Let us hear from you, or write for our new catalog No. 53.

Well-Cast MAGNESIUM AND ALUMINUM CASTINGS
Well-Made WOOD AND METAL PATTERNS

THE WELLMAN BRONZE & ALUMINUM CO.
Dept. 9, 12800 Shaker Boulevard Cleveland 20, Ohio

If you write maker identify as IEN - 7648

PULL SPROCKETS IN MINUTES WITH THE NEW OTC SPROCKET PULLER



Pulling International TD-24 sprocket with OTC 50 Ton Set.

OTC 50 TON Hydraulic Ram with Adaptors pulls or installs on the job or in the shop.

SAVE TIME, LABOR... REDUCE "DOWN-TIME"

OTC 50 Ton POWER-TWIN Hydraulic Ram . . . used for hundreds of tough jobs including the above.

Now the costly job of pulling Crawler-Tractor sprockets can be done in minutes by one man. Manufacturers approved sets are available for, Caterpillar, Allis-Chalmers and International Harvester . . . or a Universal Set to fit all three. If you have a 50 Ton OTC Ram, you need only the adaptors . . . three types of pumps available.

SEND FOR FREE FOLDER

OWATONNA TOOL COMPANY
371 Cedar Street • Owatonna, Minnesota

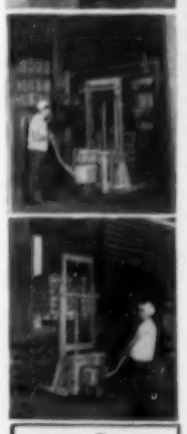
If you write maker identify as IEN - 7649

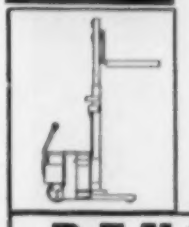
Typical example: A manufacturer had been using ordinary firebrick for forge furnace linings. Came time for relining and they decided to try B&W *lightweight* Insulating Firebrick. Result: Their fuel bills went down fully 49% — a $4,800 saving in just one furnace. Heavy furnace linings waste your fuel dollars two ways: They soak up and hold large quantities of heat which are lost when the furnace is cooled; and they conduct and lose too much heat through the wall. Lightweight insulating firebrick, containing millions of tiny air cells, heat up and cool quickly, absorbing and storing very little heat. Also, they resist heat flow, keeping it inside the furnace to do productive work.

The lighter the insulating firebrick the greater your savings on fuel. The lightest you can buy are B&W Insulating Firebrick.

THE BABCOCK & WILCOX CO.
Refractories Division
General Offices: 161 East 42nd St., New York 17, N. Y.
Works: Augusta, Ga.
R 515

If you write maker identify as IEN - 7650





REVOLVATOR GO-GETTER Lift Efficiency

Door-To-Door Warehouse Handling Efficiency

For the efficient flow of goods within and without a plant—from production to storage—to shipping—there is no lift truck on the market today that surpasses the Revolvator Go-Getter line.

Illustrated above is the high lift model Go-Getter—a favorite of the food producers—accepted throughout all industry. In 2000-3000 lb. capacities—remarkably adept in narrow aisle work, the Revolvator Go-Getter high lift truck permits great economies in warehousing.

Write for the full facts today.

REVOLVATOR CO.
8759 Tonnele Ave. North Bergen, N. J.

If you write maker identify as **IEN - 7651**

If you need a cylinder with 2", 3", 4", 6", 8", 10" or 12" diameter, and 6", 12", 18", 24" or 36" stroke, check with us. We usually have it in stock and if we ship it air freight tonight, you will have it tomorrow or the next day. If you need a cylinder with a different stroke length, we have the necessary components to assemble and ship your cylinder in a matter of just a few days.

• and when you get it, you will have a cylinder that is sturdy, reliable and built to give you long and satisfactory service.

Ledeen Cylinders are good cylinders.

Bulletin 500

VALVES • CYLINDERS
VALVE ACTUATORS
AIR-HYDRAULIC
PUMPS & BOOSTERS

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

If you write maker identify as **IEN - 7652**

WILL YOUR PLANT STAND A WHITE GLOVE INSPECTION ?

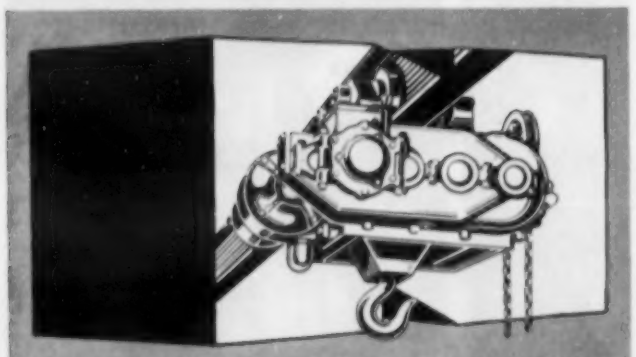
Model 218

This idea may sound far fetched — but it's straight facts that the clean plant, shop or office will have the best chance of landing defense orders.

Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Mich.

If you write maker identify as **IEN - 7653**



NORTHERN HI-LIFT
Heavy Duty Hoists

Precision built for dependable, general purpose, heavy duty service. Capacities from 2 to 15 tons in standard I-beam, monorail, lug suspension or base mounted types. Bulletin H-112.

NORTHERN ENGINEERING WORKS
210 CHENE ST., DETROIT 7, MICH.

If you write maker identify as **IEN - 7654**

METER . . Reads low input current and high output on storage battery

Source: ROCHESTER MFG. COMPANY
199 Rockwood St., Dept. IEN, Rochester 10, N. Y.

Stays "on scale"

Range is 0 to 15 amp. on the input side and 0 to 30 amp., with the same scale spread, on the output side for this new storage battery ammeter. The difference in ranges on the two sides permits reading normal low inputs so the meter needle will not ride too close to zero when a battery is being charged and so there is ample range on the output side for high discharge rates.

The meter is known as Model 4015-C43. It is particularly designed for use on tractors, construction equipment, stationary engines that operate continuously for long periods of time.

If you write maker identify as **IEN - 7655**

FLOORS . . Mastic material to patch or resurface worn floors

Source: SURFACE PROTECTION CO.
16799 Euclid Ave., Dept. IEN, Cleveland 12, Ohio

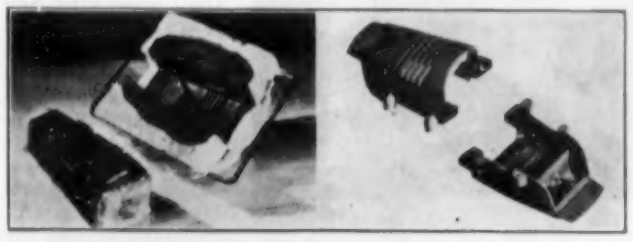
Technical data upon request

The company announces a new setup through which it is prepared to sell its floor resurfacing and patching material direct, in addition to its previous manufacture for sale by others. Trade named Surfco-Rock, the material is shipped in a compartmented container. It includes the correct quantities of asphaltic paste to prepare an area for the resurfacing operation, a quantity of setting powder and a cellular aggregate. The aggregate and powder are mixed together and water is added to prepare the material for application.

The finished floor will stand up under trucking. It will stop water penetration on damp floors. It has favorable non-skid characteristics. The material is recommended for use on platforms, ramps, sidewalks, steps, aisles, stairways and on complete floors.

If you write maker identify as **IEN - 7656**

Bakelite Company, 30 E. 42nd St., Dept. IEN, New York 17, N. Y., has assembled information on application of its



vinyl resins in a new flexible mold process. The molds can be made quickly, inexpensively and will produce prototypes of uniform quality at a nominal cost. Example is a handle for an electric iron. A dozen sample parts cost about $300 compared to $3,000 if metal molds had been required.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as **IEN - 7657**

If you write maker identify as **IEN - 7658**

40 PAGES of helpful information

on Recovering Dusts, Fly Ash, Mists, Fumes and other Suspensions from Stack Gases

Latest data from Western Precipitation on Cottrell Recovery Equipment!

Do you have operations in your plant where gas-laden suspensions, wet or dry, are a problem? Such suspensions may be falling on surrounding property, causing nuisance difficulties. Or perhaps important values are being lost that can be profitably recovered.

Whatever the nature of *your* recovery requirements, you will find this 40 page Cottrell booklet of great help. It contains up-to-date data on the latest advancements in Cottrell recovery methods — prepared by the organization that pioneered commercial application of Cottrell Electrical Precipitators almost a half century ago and has consistently led in new Cottrell developments.

This booklet summarizes such important data as . . .
- Basic types of Cottrell equipment.
- Various types of Collecting Electrodes.
- Various Shell Constructions.
- Data on CMP Units.

. . . and many other helpful facts.

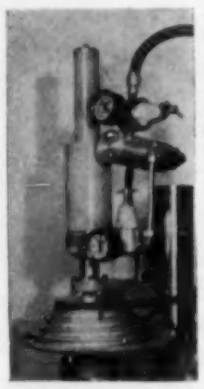
This data-packed booklet is free. Ask for Bulletin C103R.

WESTERN Precipitation CORPORATION
DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIAL FROM GASES & LIQUIDS
Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2
1429 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as **IEN - 7659**

ROTAFEED AUTOMATIC POWER FEED

makes 2,000,000 DRILL PRESS FEEDS *obsolete!*



Attaching directly to the spindle, ROTAFEED produces more holes per hour than any other type of feed. Lower air consumption further "sweetens" the profit picture. Increase your profits by installing or replacing with ROTAFEED, the world's fastest feed for drill presses.

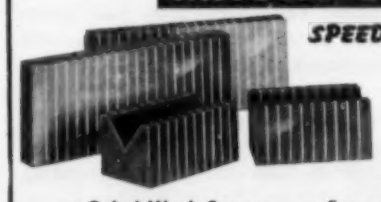
Completely automatic, the ROTAFEED package includes solenoid valve, pressure regulators and gauges, filter-lube unit, air hose with fittings and electrical controls.

A Pneuma-Draulic engineer is ready to assist you.

THE PNEUMA-DRAULIC COMPANY
Box 666, Detroit 6, Mich.

If you write maker identify as **IEN - 7660**

MAGNE-BLOX



SPEED SURFACE GRINDING SET-UPS WITH
MAGNE-BLOX
Laminated Parallels
V-Blocks & Angle Irons

- Grind Work Square
- Grind Work Parallel
- Hold Round Pieces
- Save your Magnetic Chucks
- Eliminate Clamps
- Eliminate Holding Devices

UNIVERSAL SET Code GANBO In Case $22.25

Write for Folder—Code GINXA

RADIUS DRESSER

SPEED UP PRODUCTION with the "Little Wonder" RADIUS DRESSER

Dressing and Shaping Grinding Wheels up to 1" Convex or Concave Without Diamond - Code GANLE $39.50

Natural Pointed 1/3 K. Diamond $6.50

Better Support by using Swinging Arm pivoted on Lapped Castors, eliminating Vibration and giving Better Finish.

Write for Illustrated Folder—Code GINYY

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as IEN - 7661

TOUGHEST WHERE WEAR IS ROUGHEST

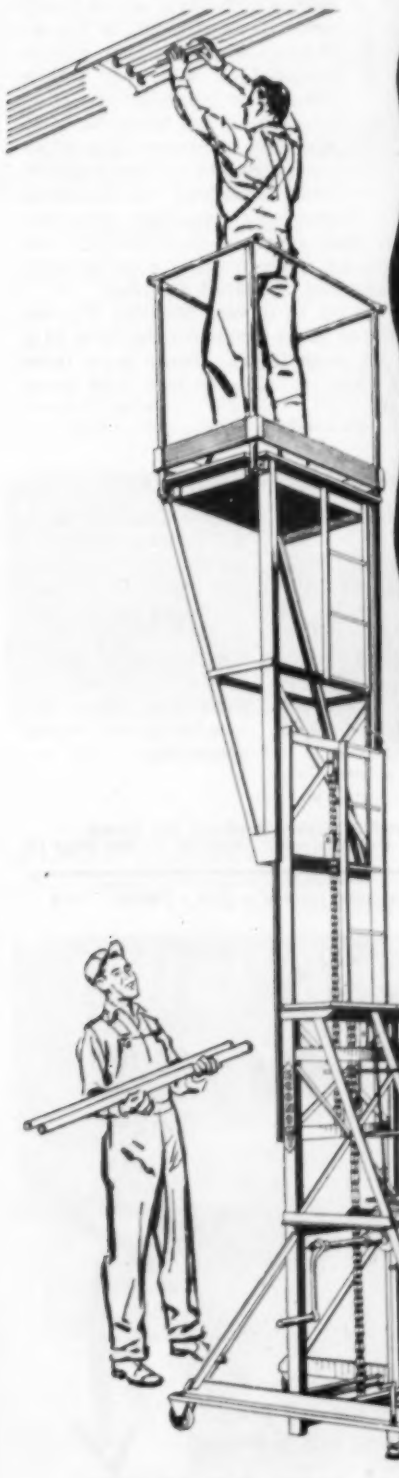
Standard abrasion tests show Tripl-Palm will outwear by many times the usual coated glove. It's an extremely heavy Vinyl coating on the palm (main point of wear) that does the job, yet it is still a soft and pliable glove for hand comfort.

NO SEAM HERE The wing thumb construction multiplies glove life. All sizes and styles available from your Jobber or write direct.

In Canada, Safety Supply Co., Toronto

THE SURETY RUBBER CO.
CARROLLTON, OHIO

If you write maker identify as IEN - 7662



Safety for Overhead Jobs

HI-REACH PLATFORM TELESCOPER Model PUL

THREE STANDARD MODELS

No. 1—Platform lift 10'9"	$305.00
No. 2—Platform lift 11'9"	315.00
No. 3—Platform lift 15'0"	340.00

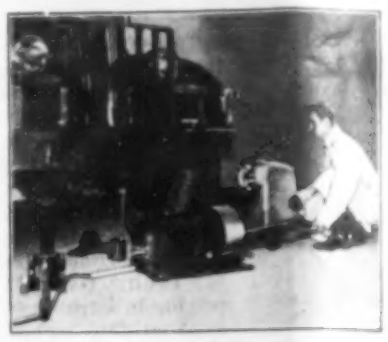
Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street, Chicago 24, Illinois

If you write maker identify as IEN - 7664

BALANCING . . Electronic equipment for motor vehicle wheels in place

Source: STEWART-WARNER CORPORATION
1826 Diversey Parkway, Dept. IEN, Chicago 14, Ill.



Catalog 36-25

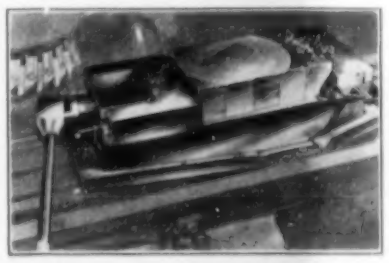
Unbalance in a motor vehicle wheel can be checked in both vertical and horizontal planes and correcting weights can be added at points indicated by this new wheel balancer. It represents further development of the equipment previously described IEN-8280-46. It applies on passenger cars, buses, trucks, trailers. It includes a motor driven wheel mounted spinner to rotate trailer wheels and the front wheels of vehicles. A hand operated pedal depresser applies on the vehicle accelerator and the vehicle engine is employed to rotate the power wheels. In each case, the wheel to be tested and balanced is held clear of the ground by application of the user's jack.

A vibration pickup, forming a part of the equipment, is set on the ground and its head is brought into contact with the vehicle axle near the jacked up wheel. The pickup connects electrically to a meter and to a stroboscope. Vibration, due to unbalance, is converted to electrical impulses that are amplified and applied at the meter and at the stroboscope to read the amount of unbalance and to locate it on the wheel. When the readings have been taken and the wheel location has been marked, a balancing weight is selected and secured in place.

If you write maker identify as IEN - 7665

VISE . . Precision hand operated to position work on a machine table

Source: J & S TOOL COMPANY
644 W. Mt. Pleasant Ave., Dept. IEN, Livingston, N. J.



Rests solidly on table

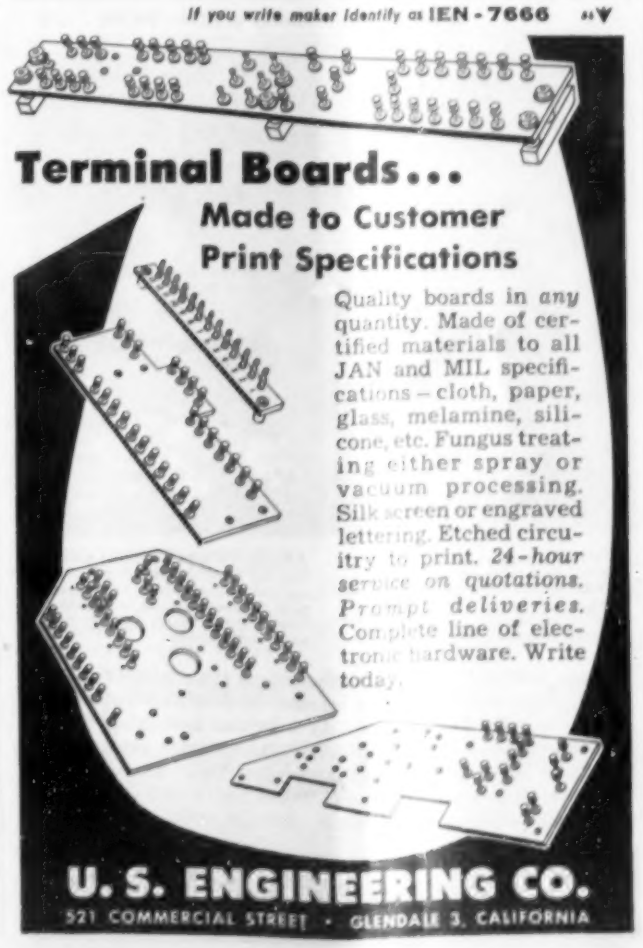
New vise, particularly for use on a milling machine, employs a tapered graduated swivel base and a hardened serrated bottom for direct table mounting. A pan prevents coolant drip. The vise opens to 12 inches. Its jaws are 3½ in. in depth.

Opening and closing action is by means of a trigger stop that permits pulling or pushing the movable jaw. A detachable knuckle handle, 18 in. in length, permits selective tightening positions at 30 deg. angles. The length of the handle is sufficient so no hammering is required to secure a work piece.

The movable jaw travels both in and down to lock a work piece horizontally against the opposite jaw and downward against the table. The solid jaw has two attachable vees with which to hold round work in vertical position. It also provides down-holding clamp action on its opposite face. The movable jaw is adjustable to a fixed or floating position. Self-cleaning snap-on parallels permit loading and unloading quickly. An adjustable stop provides true positioning for repeat operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7666



Terminal Boards . . .

Made to Customer Print Specifications

Quality boards in *any* quantity. Made of certified materials to all JAN and MIL specifications – cloth, paper, glass, melamine, silicone, etc. Fungus treating either spray or vacuum processing. Silk screen or engraved lettering. Etched circuitry to print. *24-hour service on quotations. Prompt deliveries.* Complete line of electronic hardware. Write today.

U. S. ENGINEERING CO.
521 COMMERCIAL STREET • GLENDALE 3, CALIFORNIA

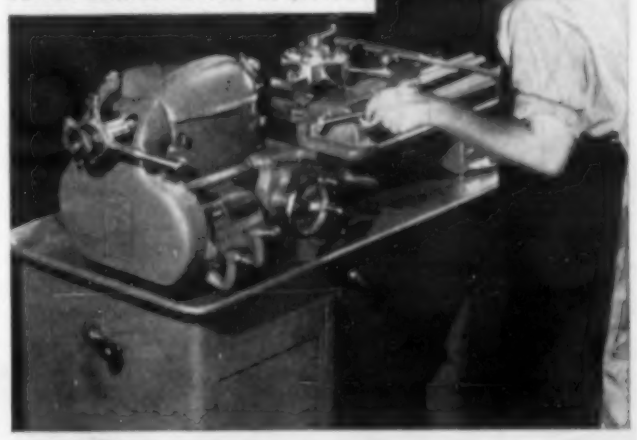
If you write maker identify as IEN - 7667

SOUTH BEND *900* TURRET LATHE

FOR EFFICIENT MACHINING OF SMALL PARTS

Here's a precision turret lathe that will help you turn out a heavy volume of small precision parts. It's fast and easy to operate. A wide range of speeds and power feeds permit efficient machining. Close tolerances can be held without effort. If you are producing parts within its capacity—½" collet, 9¼" swing—it will pay you to write for literature.

Turret Lathes as low as $975.



SOUTH BEND LATHE
SOUTH BEND 22, INDIANA
Building Better Tools Since 1906

If you write maker identify as IEN - 7668

NOW BETTER BIGGER SMALL PARTS INSPECTION

A 1001 products from pen points to fine fabrics, dies, casts and molds to intricate surface detail quickly inspected with the

'MICROCARD READER'

EASY TO CARRY— SET UP ANYWHERE

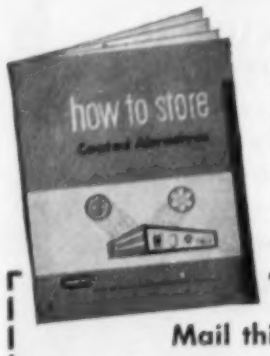
Here's the new, economical method of "pin point" accuracy in inspection of small parts and products. Control your quality by instantly magnifying the smallest part 23 times for accurate, detailed inspection. The Microcard Reader is the low cost way to higher quality for you. Write Today for Complete Information on "Inspection Applications" in Your Industry.

THE MICROCARD CORP.
READER DIVISION
Box 314D
LA CROSSE, WIS.

If you write maker identify as IEN - 7669

Storing Abrasives?

Armour's helpful booklet shows the economical, time-saving way!



This booklet from Armour, maker of *precision* coated abrasives, tells you how to stop losses – in time and money – from improperly stored coated abrasives. Clogging, filling, cracking, loss of grains—these are some of the things proper storage can prevent. Send for your free copy of "How to Store Coated Abrasives."

E7

Mail this coupon today

Please send booklet "How to Store Coated Abrasives."

Name .....
Firm .....
Address .....
City ..... *Zone* ..... *State* .....

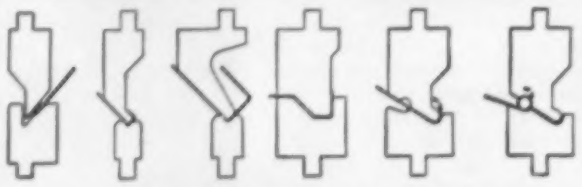
ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

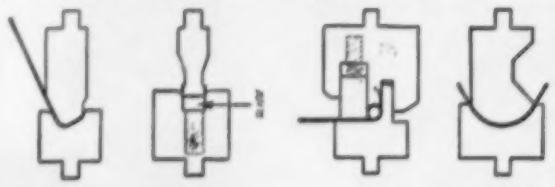
If you write maker identify as IEN - 7670

famous "34 year"

BRAKE DIES



ANY SPECIAL SIZE OR SHAPE CAN BE DEVELOPED BY OUR EXPERIENCED ENGINEERS



Made by the makers of SEMCO PRESS BRAKES (6ft.—8ft.)

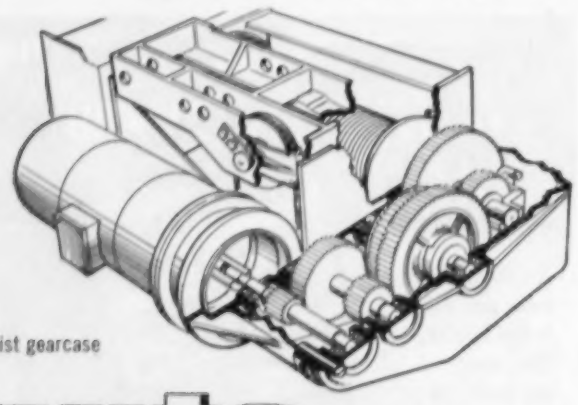
Write for new literature showing 26 Standard Brake Die styles and 2 sizes of low priced Press Brakes.

SEMCO

SERVICE MACHINE CO., INC.

200 MILLER STREET • ELIZABETH 4, N. J.

If you write maker identify as IEN - 7671



F2 hoist gearcase

guts FOR ACTION

Robbins & Myers F hoists have just that! Not an ounce of fat or extra frill inside—engineered simplicity that cuts down time losses to zero. Search for cheap materials? Not here—Buy only the best—make parts precisely for the job. That's the procedure at R&M that saves you the high cost of compromise! *Capacities:* 1,000 to 20,000 lbs. *Hoist Speeds:* from 10 to 54 f.p.m. *Control:* Push Button or Pendent Rope. *Mounting:* Lug, push or hand geared trolleys, or choice of long or short radius powered trolleys. Write for Bulletins 801-C (hoists), 805-A (trolleys), 880 (2-speed hoists). Please mention INDUSTRIAL EQUIPMENT NEWS.

take it up with

ROBBINS & MYERS, INC.

SPRINGFIELD, OHIO | BRANTFORD, ONTARIO

If you write maker identify as IEN - 7672

Gary

WELDED GRATING with the HEXAGONAL CROSS BARS

- Resistance Welded
- Tops of all bars flush
- One piece construction
- Tailor-made to your needs

Write for Catalog IN-74

Standard Steel Spring Division

ROCKWELL SPRING AND AXLE CO.

4045 East Seventh Avenue • Gary, Ind.

If you write maker identify as IEN - 7673

VALVE . . Pressure regulator with filter and air line lubricator

Source: PERFECTING SERVICE CO.
332 Atando Ave., Dept. IEN, Charlotte 6, N. C.

Bulletin 75

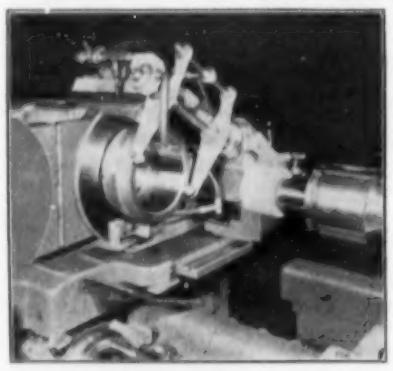
To the right in the illustration is a new combination of the company's air lubricator, pressure regulator and air line filter to serve pneumatic equipment. Four sizes apply in pipe lines from ¼ to ¾ inch. Overall height, in each case, is about 12¼ inches. Width is 7¼ in. and depth is about 4 inches. Weight is 4¼ pounds. The regulator can be set to deliver air pressure to a maximum of 200 pounds. The filter cleans the incoming air. The lubricator injects oil into the air in proportion to the amount that is being consumed by the operating equipment. The lubricator can be filled, after shutting off the regulator valve, so the main air line does not have to be shut down.

To the upper left in the illustration is the new regulator alone. It is balanced piston design and is sensitive to within ¼ pound. Also shown is the air filter to remove dirt and other foreign materials as well as free oil and water from compressed air. The plastic bowl permits visual inspection. Accumulated water and oil are blown off through a drain valve at the bottom of the assembly. The filter element is made of wool felt. It will remove particles to 30 microns.

If you write maker identify as IEN - 7674

GRINDING . . Work fixture provides for uniform wall thickness

Source: BRYANT CHUCKING GRINDER CO.
257 Clinton St., Dept. IEN, Springfield, Vt.



No distortion

The company announces availability of a new shoe type centerless grinding fixture for its 9 and 16-in. internal grinding machines. The work is positioned on two fixed shoes and rotates on the carbide faces of these shoes. It is clamped by two rollers which hold it against the driver plate on the machine spindle. Wall thickness and concentricity of a work piece can be held within 0.0001 inch.

The fixture can be used on straight and taper bore grinding and on plunge-ground contours. Work, measuring to 3½ in. in outside diameter, can be handled on the 9-in. machine with grinding stroke maximum at 3½ inches. Maximum diameter is 12 in. on the 16-in. machine with stroke to 9 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7675

Speed Clamps . . cut costs, step-up both Military and Civilian Production!

Can be opened or closed by hand, no tools needed. Attach to structure or pre-assemble to harness prior to installation. T-shaped tongue and slot prevent accidental opening.

Assembles to pre-latched position by hand; to lock compress with standard pliers held parallel to hose in tight locations. Easily removed, it can be reused indefinitely.

These SPEED NUTS Brand Fasteners are engineered to reduce production costs, eliminate assembly operations, cut materials handling and do a better fastening job! Developed for military aircraft, they now save production costs for many product lines. Your Tinnerman representative can help determine the right fastener for your fastening problem—call him or write direct to:

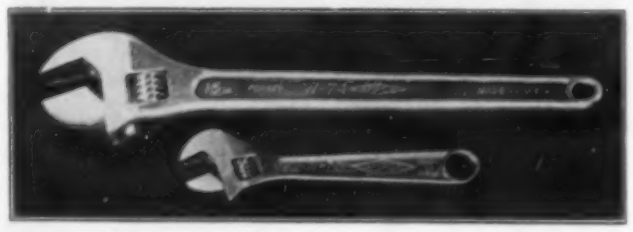
TINNERMAN PRODUCTS, INC.

Dept. 12, Box 6688, Cleveland 1, Ohio

If you write maker identify as IEN - 7676

WRENCH . . Non-sparking design forged to same size as steel wrench

Source: AMPCO METAL INC.
1745 S. 38th St., Dept. IEN, Milwaukee 46, Wis.



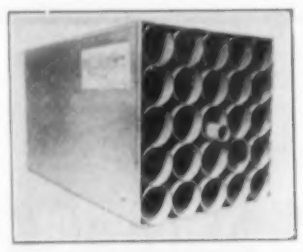
Safe in hazardous locations

Five sizes, between 6 and 15 in., are included in the company's new line of forged non-sparking open end wrenches. Each is made of Ampco Metal. Balance and appearance are the same as open end steel wrenches of the same size. Weight is about 10 per cent less. The 6-in. wrench, W-70, rates 700 in. lb. in test load capacity. The 15-in., W-74 wrench, rates 2,800 in. pounds. Each unit is guaranteed against defect or breakage during normal use. Replacement parts are interchangeable design.

If you write maker identify as IEN - 7677

STORING . . Container and tubes to hold rolled-up tracings and prints

Source: ROLL & FILE SYSTEMS INC.
Box 85, Dept. IEN, Ferndale 20, Mich.



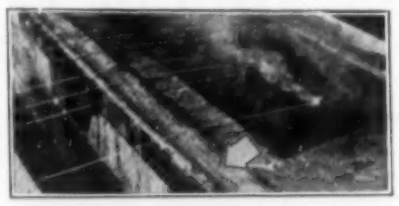
Clean, accessible

Corrugated board container, reinforced and closed at the rear end, holds a set of paper tubes measuring 2½ or 1¾ in. in diameter. A smaller tube is supplied on which to roll a tracing or print for insertion into one of the tubes for storage. The container has sufficient strength to take a 200-lb. distributed load and so can be stacked in multiple assembly. It is finished in a plastic base green or gray enamel. The tubes are similarly treated. An index form is supplied with each container to record location of stored material.

Section dimensions are 14 by 14 inches. Multirol File 49, with 1¾-in. tubes, is available in six inside depths from 11¼ to 54½ inches. Multirol 25, with 2½-in. tubes, is in three inside depths measuring 30½ to 42½ inches. List price ranges from $5.25 to $12.95.

If you write maker identify as IEN - 7678

Semi-scaled steel wire, traveling at 100 fpm. from a pickling bath, rides out over a silicon carbide wear stone supplied by Carborundum Co., Refractories Div., Dept. IEN, Perth Amboy, N. J. There is no sign of grooving after six months of continuous operation.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7679

SHOPPING FOR

LOW COST

CLASS B

Insulation?

Nothing on the market today excels the low priced Class B protection of Varflo Tubing and Sleeving

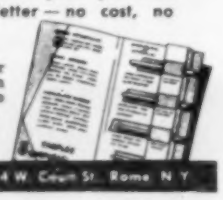
Flexible Varflo is solvent-, oil-, moisture-, flame-, and fungus-resistant. Passes the NEMA heat endurance test of 15 minutes at 225° C. Also passes 100 hours at 125° C. Will not lose dielectric strength when subjected to severe handling, bending and twisting. Has good shelf life.

Available in Grades A-1 and B-1 tubing and Grades C-1 and C-2 sleeving.

Let us help you with your problem. Describe it in a letter — no cost, no obligation.

Varflex CORPORATION

Send for free folder containing description and samples of Varflo Tubing and Sleeving.



Varflex Corporation 514 W. Court St., Rome, N. Y.

If you write maker identify as **IEN - 7680**

MOTOR . . General purpose dc., compound wound, 1/3, 1/2, 3/4 hp.

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Can be reconnected

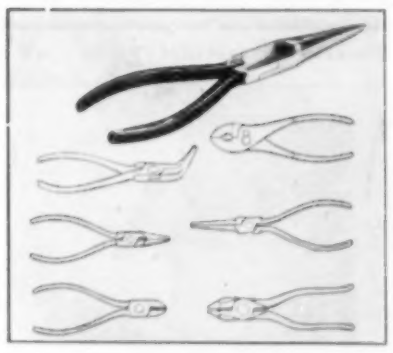
New construction of three of the company's general purpose dc. motors, for operation on 110/220 volts in frame sizes 60 and 70, include an enlarged terminal box, new brush mounting, rubber mounted bearings and a new die cast aluminum ventilating fan.

The terminal box has been enlarged to take 6 leads. The commutator end shield has been changed in design to enclose the cast-in box. Three speeds are 1,725, 1,140 and 860 rpm.

If you write maker identify as **IEN - 7681**

PLIER . . Seven designs, 4 1/2 to 10 in. sizes, heat treated

Source: VACO PRODUCTS CO.
317 E. Ontario St., Dept. IEN, Chicago 11, Ill.



Single or in assortment

Diagonal cutters, needle nose in straight and bent designs, long nose, long flat nose, heavy duty slip joint, Vacoruv adjustable plier **wrenches** and linemen's side cutters are all included in a new line of pliers. Each is available in several sizes and each unit is individually packaged. The units are precision fitted, induction heat treated and individually tested.

If you write maker identify as **IEN - 7682**

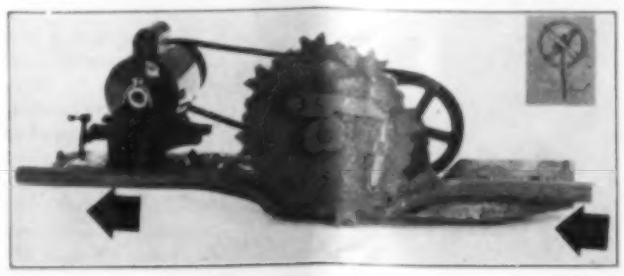
Rows of pins, making up a "station", are welded to a structural frame mounted on casters in this new Bobbin Transporter for textile mills. The assembly can be cadmium or zinc plated or hot dip galvanized. The caster arrangement permits swinging the truck in its own length. Rubber bumper strips can be added when specified. Standard Pressed Steel Co., Box 732, Dept. IEN, Jenkintown, Pa. is the manufacturer.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7684**

CONVEYING . . Tube enclosed chain with load supports at 6 in. intervals

Source: U. S. SPRING & BUMPER CO.
4951 Alcoa Ave., Dept. IEN, Los Angeles 58, Calif.



Conveyor rides in closed loop

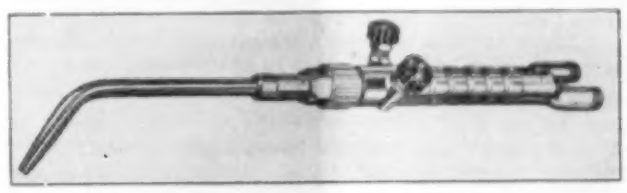
Model 108-V designates a new motor driven sprocket assembly for installation in a straight horizontal run of the Chainveyor equipment, previously described IEN-10763-52. The sprocket engages the chain that rides in a slotted tube with load carrying supports extending downward through the slot. The sprocket is mounted free on its drive shaft and is rotated by the action of a cam and spring backed lever. The cam is secured to the shaft which extends through the sprocket to a gear reduction on the opposite side. Overload will cause the spring backed lever to move away from the cam and prevent damage.

The assembly is equipped with a mounting plate. It weighs 160 lb. and rates 400 lb. of pull on the conveyor chain. It can be equipped with a Gerbing variable speed drive on a 3 to 1 ratio for optional standard speed at 1 to 3, 3 to 9, 5 to 15 or 10 to 30 fpm. The motor rates 1/3 hp. and is available for single-phase 110 or 220-volt 60-cycle ac. at 1,725 rpm.

If you write maker identify as **IEN - 7685**

WELDING . . Oxyacetylene torch with attachment for cutting operation

Source: NATIONAL CYLINDER GAS CO.
840 N. Michigan Ave., Dept. IEN, Chicago 11, Ill.



Weighs 11 oz. including mixer

Torchweld "45" is a new medium duty torch with welding capacity in steel from 28 gage to 1/2 inch. After application of a special cutting attachment, it has capacity to cut steel from 1/8 to 1/2 in. in thickness.

The design employs a solid aluminum handle with an integral valve body and brass tubes. Valve wheels are located at the front of the handle. The mixer employs the company's Stab-L-Flow anti-flashback action. It is fitted with Gas-Tite seating rings that permit application of the tips with hand tightening.

Two sets of welding tips are available in 12 sizes. They include one-piece and screw-in designs. The former produces a semi-pointed cone flame for heat concentration in a small area. The screw-in design produces a semi-blunt flame cone. This tip will continue to operate satisfactorily even though it is handled without particular care.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7687**

Type N ROTO-CLONE used for collecting fine dust or stringy particles from rubber processing.

IF YOU PROCESS **RUBBER** IN ANY SHAPE OR FORM YOU'VE GOT DUST PROBLEMS FOR **ROTO-CLONE**

Fine dust or stringy particles from the buffing, grinding or machining of hard or soft rubber are readily controlled by ROTO-CLONE. If it's dust generated by Banbury mixer or roll mill or from handling such materials as talc, carbon black, sterates, rosins, etc., ROTO-CLONE can do an equally effective collection job.

Write for Bulletin No. 277 describing the AAF Type N ROTO-CLONE — a compact, hydro-static precipitator for collecting all the above types of dust with highest efficiency.

American Air Filter COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as **IEN - 7688**

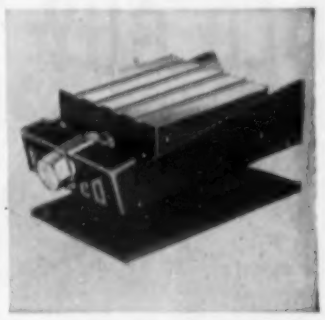
PERIODIC LEVELING IMPORTANT TO PEAK MACHINE EFFICIENCY!

Machine tool manufacturers emphasize the importance of not only setting machines level, but keeping them that way. It's a must where accurate work tolerances are involved, or, if you're trying to keep down machine maintenance costs.

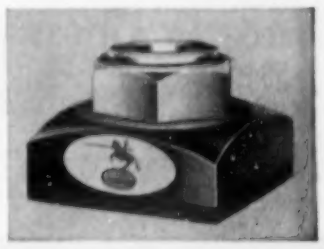
With EMPCO JACKS, setting machines level and keeping them that way is as simple as turning a screw . . . for that's all you do! Apply a wrench to the "hex" screw head and turn right or left until your level indicator reads "zero."

To reduce vibration, VI-SORB mounting pads are optional with each style EMPCO JACK. Mounting pads not only lessen the vibrations generated within the machine itself but also isolate it from the effects of vibrations in the building.

Each style EMPCO Leveling Jack is made in three sizes for light to heavy equipment and each size is available in many models suitable for various installations.



Style JD Wedge type

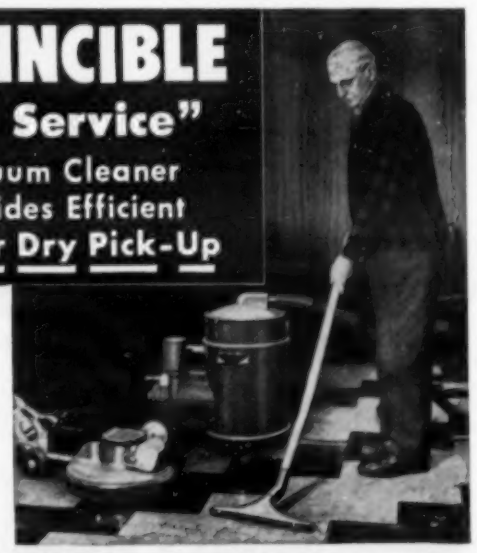


Style JS Screw type

For complete specifications and prices, write the Enterprise Machine Parts Corporation, 2737 Jerome Ave., Detroit 12, Michigan.

If you write maker identify as **IEN - 7683**

INVINCIBLE "All Service" Vacuum Cleaner Provides Efficient Wet or Dry Pick-Up



Rubber Bumpers Prevent Scuffing

Advanced design of Invincible's 3/4 h.p. "All Service" Vacuum Cleaner entirely eliminates loss of efficiency due to humidity sealing the filter bag. A positive automatic shut-off valve prevents messy overflowing that often damages the cleaner. Write for complete story . . .

ASK FOR A DEMONSTRATION • NO OBLIGATION

INVINCIBLE VACUUM CLEANER MFG. CO.
Dover, Ohio

QUALITY PROVED BY PERFORMANCE

• There's no mistaking a champion—in any field. By cleanness and straightness, Nicholson and Black Diamond brands reflect their leadership in the field of files. But *performance* brings out a lot more—like: the high efficiency of their correctly shaped and accurately cut teeth, their uniform hardness, their high-quality special-analysis steel.

Constant study has also kept Nicholson in stride with the forward movement in shop practices and materials. Nicholson is always alive and alert toward giving you the broadest and most comprehensive file service and the utmost in file values.*

BUY THROUGH YOUR INDUSTRIAL DISTRIBUTOR

*SEND FOR *"FILE FILOSOPHY"* for a larger picture of the products of the world's foremost file manufacturer. Invaluable to managing, purchasing and production heads. FREE.

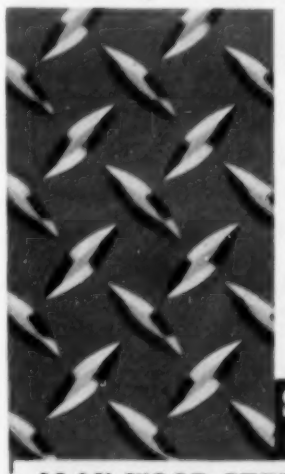
NICHOLSON FILE COMPANY
33 Acorn St., Providence 1, R. I.
(In Canada, Nicholson File Company of Canada Ltd., Port Hope, Ont.)

NICHOLSON FILES *FOR EVERY PURPOSE*

If you write maker identify as **IEN - 7689**

Foot Safety and Low Cost DO go together with

A.W. SUPER-DIAMOND Economy Rolled Steel Floor Plate



No other safety flooring can match *Super-Diamond's* durability and easy maintenance for so low a cost.

Super-Diamond takes hard blows and heavy loads in stride . . . resists heat, fire and most chemicals.

Super-Diamond cuts maintenance . . . is easy to clean with hose, mop or broom because there are no cracks or corners to hold dirt.

Super-Diamond features an exclusive engineered raised diamond pattern that puts 40 anti-skid traction points in every footstep for extra safety.

Mail handy coupon today for full details on **Super-Diamond**—high in safety, lowest in cost. There's no obligation.

Pattern 1/3 actual size.

SUPER-DIAMOND ROLLED STEEL FLOOR PLATE

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Please send your new, free Booklet SD-3 on A. W. *Super-Diamond* for safety.

Name_____ Title_____
Address_____
City_____ Zone_____ State_____

If you write maker identify as IEN - 7690

AMP SOLISTRAND TERMINALS

NOW UP TO 600,000 CIRCULAR MILS!

AMP "SOLISTRAND" terminals, strongest and best of all non-insulated solderless connectors, are now available in wire ranges up to 600,000 circular mils! Wire is formed into one homogeneous mass by a deep pressure crimp. Use on either solid, stranded, or irregular shaped wires or combinations of each. Crimp with AMP's light weight hand hydraulic tool or AMP's new DYNA-CRIMP pneumatic-hydraulic power tool.

SEND FOR FREE CIRCULAR MIL AREA CHART—

AMP

AMP Trade-Mark Reg. U. S. Pat. Off. ©1954 AMP

AIRCRAFT-MARINE PRODUCTS, INC.
POWER TERMINAL DIVISION
2100 Paxton Street, Harrisburg, Penna.

If you write maker identify as IEN - 7691

PRETTY SPRY FOR AN OLD GUY

M.E. 1251.2

20 years makes any electrical connector a venerable old-timer and the JOY plug pictured above has faithfully served its owner (*name on request*) since '31. *Your portable electric connectors will also last longer and require less maintenance attention if they're JOY built.*

TODAY'S DESIGNS

Thousands of styles and shapes ranging from "Cartridge-size" to mammoth round units for heavy industrial use have been developed. NO question about it, the JOY electrical connector line deserves your earnest consideration. Ask for your free copy of bulletin MC108, now.

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 7692

ROCKWOOD SpotPROTECTION SYSTEMS USED FOR SMALL-AREA FIRE HAZARDS

Compact custom-engineered Rockwood SpotPROTECTION Systems are excellent for small-area, though potentially dangerous, hazards like the tank truck loading platform above. Such hazards get on-the-spot fire-choking action when these systems are installed.

Systems handle Rockwood WaterFOG, FogFOAM, FOAM or "WET". Automatic or manual operation. Three sizes: 2, 4 or 6 Heads. Special Systems also available for use with Rockwood FOAM Maker Chambers.

Systems easily replenished with FOAM or "WET", each available in 5-gallon cans or 50-gallon drums.

Write for Rockwood SpotPROTECTION System engineering data sheet to see type of information needed for these carefully engineered Systems.

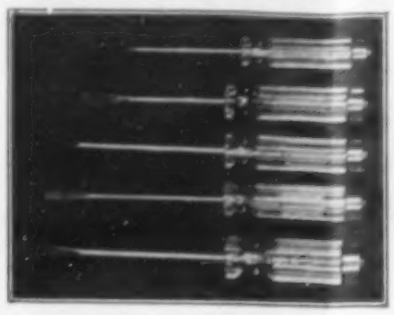
ROCKWOOD

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to Cut Fire Losses
307 HARLOW STREET • WORCESTER, MASS.

If you write maker identify as IEN - 7693

SCREW DRIVING . . Hand tools, plastic handles and free turning knobs

Source: TIME MFG. COMPANY
Fisher Blvd., Dept. IEN, Westminster, Mass.



Prevents blisters

Illustrated is a new set of five screw drivers with 4 to 6-in. blades, plastic handles and a free turning knob that rests in the palm of an operator's hand and provides back-up for the tool. Two of the drivers are for Phillips head screws and three are for regular slotted screws. The set lists at $3.95. The shanks are made of high-grade steel.

If you write maker identify as IEN - 7694

TUBE . . Flexible stainless steel for hot or cold corrosive liquids, gas

Source: AMERICAN BRASS CO.
696 S. Main St., Dept. IEN, Waterbury 20, Conn.

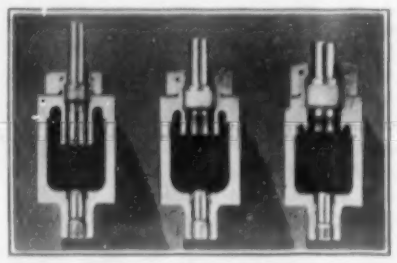
Details are in Bulletin STC-1

Stainless steel has been added to the company's line of flexible metal tube, particularly to convey corrosive materials at high temperatures in connection with vibration absorption, compensation for mis-alignment, movement and offset motion and for installation in confined locations. Types 316 and 321 stainless are available in tube sizes ranging from ¼ to 4 in. in nominal inside diameter. Corresponding outside diameter, with a standard braid, is about ½ to 5⅝ inches. Burst pressure, with one braid, ranges from 4,500 lb. on the smallest tube to 800 lb. on the largest. Minimum center line bending diameter is 11 to 48 inches.

The tube is available in open pitch design, plain or with a stainless steel braid. It also is made in close pitch design where flexibility is a major factor as well as vibration absorption. Either the open or closed pitch tube is available in complete assemblies including fittings to specification.

If you write maker identify as IEN - 7695

Cooperative research between General Electric and Wales-Strippit Corp., 361 Payne Ave., Dept. IEN, North Tonawanda, N. Y., has resulted in increasing the compressibility of the silicone liquid employed in the Wales Comproil spring from 6.2 to 12 per cent at 20,000 pounds. The force, or stroke, for a given size spring has been doubled as a result. The springs were initially developed by the company for use as strippers in press tools. They are finding additional uses in industrial equipment. The company is prepared to send you technical data on the subject.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7696

TWO SIMPLE REASONS WHY!

1+1+1+1=4

9\54

• We will guarantee—in writing—that you'll save money on your blast cleaning costs when you use Permabrasive* shot and grit instead of conventional annealed abrasives. Yes sir, a guaranteed savings in writing.

We can afford to make this statement, because Permabrasive shot and grit are better. They are better for two simple reasons: (1) Permabrasive is made from metal of the proper analysis. Its carefully controlled chemical composition insures uniform response to heat treatment and maximum resistance to breakage. (2) Permabrasive is heat treated properly. A continuous processing method insures complete heat treatment of each abrasive particle, resulting in a high degree of uniformity and assuring maximum abrasive durability.

Permabrasive will save you money and we can prove it. Write the nearest Hickman, Williams office for proof and a complimentary copy of "A Primer on the use of shot and grit."

*Licensed under U. S. Patent No. 2184926, U. S. Application No. 619602

PERMABRASIVE* SHOT AND GRIT IS PRODUCED EXCLUSIVELY BY THE NATIONAL METAL ABRASIVE CO. • Cleveland, Ohio
AND SOLD EXCLUSIVELY BY
HICKMAN, WILLIAMS & CO.
(INCORPORATED)
CHICAGO • DETROIT • CINCINNATI • ST. LOUIS • NEW YORK
CLEVELAND • PHILADELPHIA • PITTSBURGH • INDIANAPOLIS

If you write maker identify as IEN - 7697

YOU GET TRUSTWORTHY LIQUID or GAS COOLING Plus Great Water Saving

● With the NIAGARA AERO HEAT EXCHANGER you can cool air, gas, water, oils, chemicals, jacket water for engines or process equipment. You get lower costs and really accurate control of temperature. You have a closed system of cooling, free from dirt and maintenance troubles.

The Niagara Aero Heat Exchanger uses atmospheric air to cool liquids and gases. Great saving in cooling water, piping and pumping and power return the cost to you quickly.

Write for Bulletin No. 120

NIAGARA BLOWER COMPANY
Dept. EN, 405 Lexington Ave., New York 17, N. Y.

If you write maker identify as IEN - 7698

ASKANIA EDGE POSITION CONTROL for every web guiding job

This new 12-page book describes Askania Edge Position Control, the modern control for every web guiding job. Suitable for nearly every kind of material, from light scrim and fragile tissue to steel strip. Only a breath of air touches the controlled material—yet force and speed available for correction are practically unlimited. The system is simplicity itself—easy to install, easy to maintain.

Write for your copy of Bulletin 161.

ASKANIA REGULATOR COMPANY
280 E. Ontario Street Chicago 11, Illinois
Subsidiary of General Precision Equipment Corp.

If you write maker identify as IEN - 7699

SILVER GRAPHALLOY

BRUSHES AND CONTACTS

. . . for applications requiring low electrical noise, low and constant contact drop, high current density and minimum wear.

GRAPHALLOY

EXTENSIVELY USED IN

SELSYNS • ROTATING THERMOCOUPLE and STRAIN-GAGE CIRCUITS • ROTATING JOINTS GUN-FIRE CONTROLS • DYNAMOTORS etc.

Wide range of grades available for standard and special applications.

Brush holders and coin silver slip rings available for use with Silver Graphalloy Brushes.

Write us for Data Sheets and further information. Outline your problem and we will apply our "40 years' experience" toward its solution.

OTHER GRAPHALLOY PRODUCTS:

Oil-free, self-lubricating Bushings and Bearings (applicable −100° to +300° F.; with expansion coefficient half that of steel will not seize shaft at low temperature); oil-free Piston Rings, Seal Rings, Thrust and Friction Washers, Pump Vanes.

GRAPHITE METALLIZING CORPORATION
1032 NEPPERHAN AVENUE • YONKERS, NEW YORK

If you write maker identify as IEN - 7700

PEERLESS PROVIDES
"Private" MOTOR FACILITIES

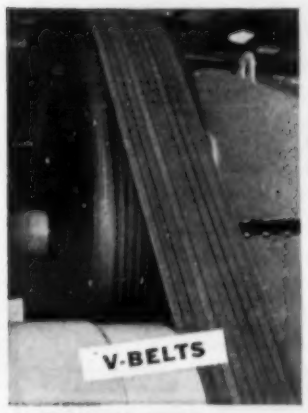
If you wish you had your own motor department to build exactly what you want, you'd best talk to Peerless. We're set for short production runs and big scale engineering. Together, we'll solve your "spec" problem and set production and delivery dates to suit your needs. To get started, call Peerless. Talk to our engineers. There's no obligation to you. You'll be joining a blue ribbon roster of American industries that consider Peerless as their own motor department.

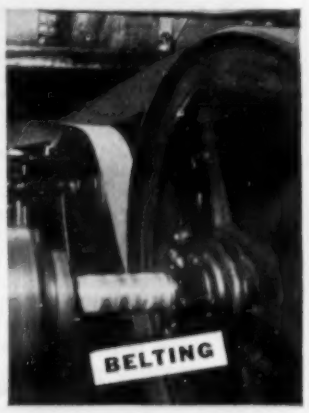
Robert Gamble
President

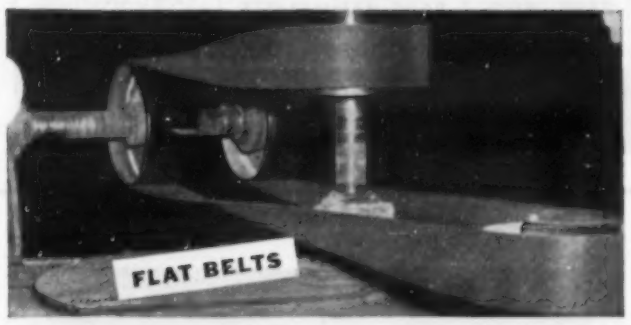
THE PEERLESS ELECTRIC CO. • W. MARKET ST., WARREN, OHIO
MOTORS FANS BLOWERS

If you write maker identify as IEN - 7701

INSTANT SUPPLY!







A Coast-to-Coast Chain of Warehouses

"U.S." is really geared to deliver. You actually get immediate delivery or shipment – thanks to your local "U.S." jobber backed by the strategically located "U.S." District Sales Offices and transcontinental chain of warehouses. The "U.S." Line is complete, including V-belts, sheaves, flat belts and belting for any power transmission need.

Every item in the "U.S." Line is famous for durability and for economy in maintenance. Every V-Belt has the unique Equa-Tensil Cord Section which distributes the pull so evenly among the cords that each carries its full share of the load. "U.S." engineers will study your needs for any specialized drives. See your distributor or contact any of our 25 District Sales Offices or write to address below.

MULTIPLE V-BELTS • F. H. P. V-BELTS
SHEAVES • FLAT BELTS AND BELTING
SPECIAL PURPOSE BELTS

U.S. RUBBER — SERVING THROUGH SCIENCE

"U.S." Research perfects it
"U.S." Production builds it
U.S. Industry depends on it

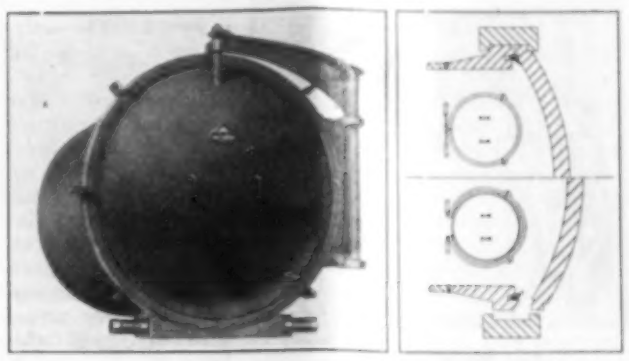
UNITED STATES RUBBER COMPANY
Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe & Fittings • Molded & Extruded Rubber & Plastic Products • Protective Linings & Coatings • Grinding Wheels • Packings Tapes • Conductive Rubber • Adhesives • Roll Coverings • Mats & Matting

If you write maker identify as IEN - 7703

SEALING . . Quick opening door for pressure vessels to 10 ft., 600 lb.

Source: H. W. NORTH COMPANY
1705 Parade St., Dept. IEN, Erie, Pa.



Bulletin QD-5401

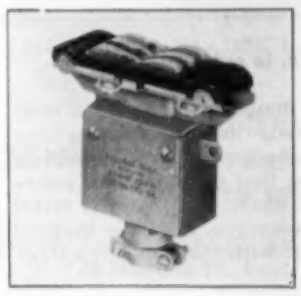
A dished cover, made of plain or special steel, is fitted with a dovetail locking groove to engage a three-segment clamping ring in the construction of this new North-Erie quick opening door. A forged steel flange, with a gasket equipped groove, completes the assembly. It is designed for arc welding to the pressure vessel shell.

The clamping ring can be opened and closed by hand wheel or by power operation with remote control. Pressure, built up within the vessel, holds the gasket in seated position. Construction and materials comply with the ASME Code Specifications for Unfired Pressure Vessels. A range of hinge and davit assemblies is available to suit individual requirements. Jacketed design, for heating and cooling, can be supplied.

If you write maker identify as IEN - 7704

ELECTRIC DUCT . . Rolling trolley for Feedrail "60" trolley busway

Source: FEEDRAIL CORPORATION
125 Barclay St., Dept. IEN, New York 7, N. Y.



Bulletin 36

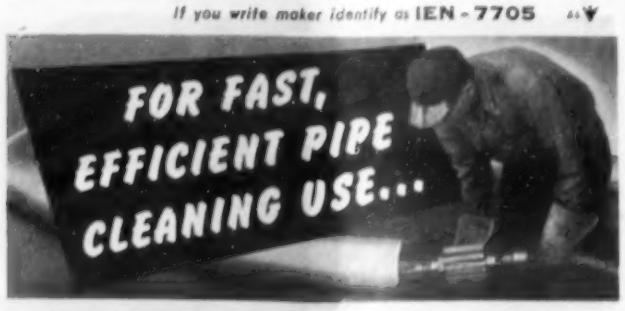
Current rating is 20 amp. on 250 volts for this new Special Service trolley. This is sufficient to supply current to motors rating to 3 hp. for operation of equipment such as hoists, small cranes, portable equipment and process machinery. The new unit is available in 2- and 3-pole assembly and in fused and non-fusible design.

Replaceable copper graphite brush contacts, with two individually spring loaded contacts per pole, are mounted in a one-piece insulator block in a steel housing. The contacts are designed for continuous movement application at speeds to 250 feet per minute. The trolley wheels and the combination guide and undercarriage wheels are mounted on oil impregnated bronze bearings.

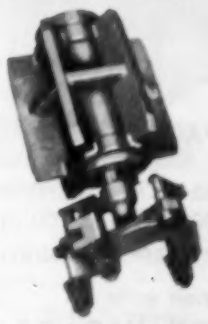
A polarizing tab on the housing prevents trolley insertion into the track unless it is in correct polar position. The steel terminal box is fitted with a removable cover. It encloses solderless type pressure connectors on a terminal block. There is provision also for chain or link connection to the equipment being powered. A cable clamp prevents strain.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7705



LAGONDA TUBE CLEANERS



Motor with Quick Repair head and sleeve for 10" straight pipe. A universal coupling would be used between the motor and head for curved pipe cleaning.

This rugged, air or steam driven motor, teamed with a wide selection of cutter heads, will clean any pipe up to 20" I.D. New or used . . . straight or curved. It makes short work of rust, weld spatter, sand, mill scale, etc. Yet, the tough cutter heads will not mar inner pipe surfaces. They are widely used throughout the pipe manufacturing and fabrication fields today.

For full details see your local Elliott representative or write for Bulletin Y-54, Elliott Company, Springfield, Ohio.

Y4-11

ELLIOTT Company

STEAM TURBINES • MOTORS • GENERATORS • DEAERATING HEATERS • EJECTORS
CONDENSERS • CENTRIFUGAL COMPRESSORS • TURBOSUPERCHARGERS • TUBE CLEANERS • STRAINERS

If you write maker identify as IEN - 7706

NEW THRU-TYPE 600 VOLT Molded Current Transformer

Allis-Chalmers new Type TWM thru-type current transformer for indoor or outdoor application eliminates bolted connections, speeding installation. Primary conductors pass through an oval window large enough to accept two 500 MCM stranded conductors with 600-volt insulation.

The transformer is molded in thermo-setting epoxy resin. This material does not deteriorate, requires no painting. The transformer is compact and light in weight — will fit into multiple mountings in standard instrument transformer enclosures.

Get complete facts from your nearby Allis-Chalmers authorized distributor or district office. Or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Data Sheet 61S8033.

A-4233

ALLIS-CHALMERS

If you write maker identify as IEN - 7707

Reduce Inventory

Why stock a big assortment of ready-made hose lines when a small supply of Aeroquip bulk hose and detachable, reusable fittings answers the purpose. With Aeroquip you make hose line replacements as they are needed. *You save time, cut costs, reduce inventory!*

Aeroquip

AEROQUIP CORPORATION, JACKSON, MICHIGAN

FLEXIBLE HOSE LINES • DETACHABLE, REUSABLE FITTINGS • SELF-SEALING COUPLINGS • BREAKAWAY COUPLINGS • HYDRAULISCOPE
AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

If you write maker identify as IEN - 7708

HOW TO SPEED Drum Handling and Save Money

Exclusive! American Drum and Barrel Cradles are designed for one-man handling.
Exclusive! American's disappearing patented loading bar adds speed and safety.
Exclusive! American's Semi-knocked-down packaged units save shipping costs and warehouse space.

Clip coupon and mail today.

THE AMERICAN PULLEY COMPANY
4240 Wissahickon Ave, Phila. 29, Pa.

Complete line of Pressed-Steel Hand Trucks
•
Steelite® Industrial Wheels
•
Drum King Hand Truck

Gentlemen:
Please send me more information on American Drum and Barrel Cradles.
Name _____
Firm Name _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as **IEN - 7709**

FILL-IN
NAME-PLATES
QUICKLY *with*—

THIS IS ONLY ONE OF A FULL LINE OF NAME-PLATE STAMPING MACHINES MADE EXCLUSIVELY BY

The ACROMARK Company

7 MORRELL ST., ELIZABETH 4, N. J.

If you write maker identify as **IEN - 7710**

How to Select the Right Liquid Meters

Free metering Data Book . . . Yours for the asking

Save time and ingredients, get closer quality control and more accurate cost accounting with Neptune meters. Now accurately measuring more than 150 liquids including water, oils, syrups, brines, soap solutions, solvents, etc. Capacities from 2 to 1000 gpm. Registers range from simple counters to new Auto-Stop automatic batching meters. *Ask for Bulletin 566 UI.*

neptune

NEPTUNE METER COMPANY, 50 W. 50th ST., NEW YORK 20
Branches in Principal Cities
In Canada: **NEPTUNE METERS LTD., TORONTO 14, ONTARIO**

If you write maker identify as **IEN - 7711**

NEW 1954 MODELS

LIGHT AS YOU WANT IT
for Machine Tools, Assembly and Inspection Benches

FOSTORIA LOCALITES

FINEST OF ALL LOCAL LIGHTING

Directs Light Exactly as Needed

MODEL 2-MH-700
Overall length 35"
$7.04 Each in std. pkg. of 8
Less $8.80 ea.

Reflector—5" long x 3⅞" wide x 3" deep. Rotates 360°. Accommodates 100 watt A-21 or 60 watt A-19 lamp.

Arm Joints—New patented tension disc design. Easy, smooth action with only one hand. Available with 1, 2 or 3 arms.

Base—Universal for vertical or horizontal mounting. Also adaptable to outlet boxes. Collet revolves 360°.

Wiring — McGill industrial socket 4101-FL with Levolier switch. 8 ft. POT-32 18-2 heavily insulated oil resistant wiring with molded plug.

Finish—Gray baked enamel. Reflector interior, high temperature White.

WRITE for complete catalog of Localite models for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION
Fostoria, Ohio
Localites available through wholesalers everywhere

LOCALITE fostoria for Light ON the Job

If you write maker identify as **IEN - 7712**

DRILLING . . Portable electric tool drives its ¼ in. chuck at 1,800 rpm.

Source: PORTER-CABLE MACHINE CO.
34 Exchange St., Dept. IEN, Syracuse 8, N. Y.

Also mounts in stand

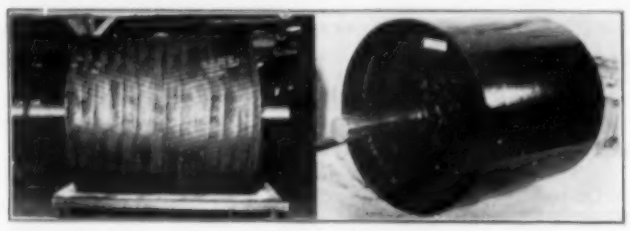
Model 515 designates a new electric drill employing a 110-volt universal motor with ball bearing gearing and control assembled in a die cast aluminum housing. The control includes a trigger switch and a push button lock. The upper and lower armature bearings and the lower spindle bearing are sealed for protection against dirt. A fan on the shaft prevents overheating.

Standard equipment includes the gear type chuck with a key, key holder and 7-ft. extension cord and plug. The tool will take bits for ½-in. holes in wood in addition to its rated capacity at ¼ in. in steel.

If you write maker identify as **IEN - 7713**

CONVEYING . . Tapered hub pulley, crowned or straight, to mount a belt

Source: AMERICAN PULLEY CO.
4200 Wissahickon Ave., Dept. IEN, Philadelphia 29, Pa.



Larger than 60 in. to order

Sizes range from 6 to 60 in. in diameter and from 12 to 63 in. in face width in this new Wedg-tite line of heavy-duty steel conveyor pulleys. The new design is characterized by interchangeable split tapered hubs that draw into the pulley end discs to clamp in place on the shaft. The pulley is suited for use in any location on a belt conveyor. It can be supplied with corrosion resistant coating or with the company's Griplex Spiralagging.

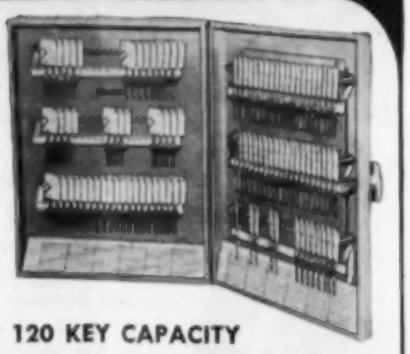
If you write maker identify as **IEN - 7714**

New use for metal foil is suggested by Reynolds Metals Co., 2500 So. 3rd St., Dept. IEN, Louisville 1, Ky. It has numerous examples of successful application of the foil as a protective wrapping for small parts to be placed in a heat treating furnace. Wrapping the parts in the foil, for tempering below the melting point of the wrap, prevents atmospheric discoloration and contamination of the parts. They will retain their original bright finish and not require a cleaning operation. Dies, tool steel parts and machine components can be similarly protected during tempering.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7715**

STOP HUNTING FOR KEYS



120 KEY CAPACITY

Here's real "key insurance" in a compact KE-CABINET. Made of 20 gauge cold rolled steel with suitable hardware to provide maximum key security. Equipped with numbered KE-TAGS of durable, vulcanized fibre. KE-CABINETS come in two sizes to hold 60 to 120 keys and 100 to 200 keys. The cabinet is finished in modern office grey.

For further information write
CUSHMAN & DENISON MFG. CO.
153 West 23rd Street • New York 11, N. Y.

KE-CABINET

If you write maker identify as **IEN - 7716**

WHEN
HOLDING POWER
REALLY COUNTS!

As one of the leading producers of industrial fasteners, Eagle makes certain that its wood, machine and sheet metal (self tapping) screws have highest holding power.

High quality, certified materials, closely controlled manufacturing operations and strict inspection assures overall precision.

Eagle is highly qualified to produce "special" cold forged products—and offers engineering assistance in the development of these products.

EAGLE

the EAGLE LOCK COMPANY
Subsidiary of Bowser, Inc.
TERRYVILLE, CONNECTICUT

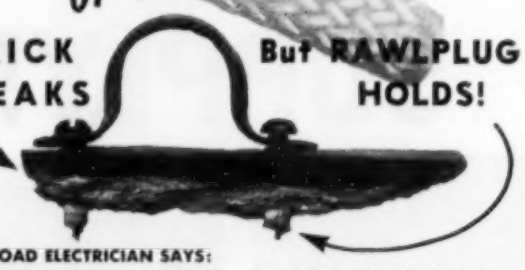
If you write maker identify as **IEN - 7717**

PROOF of HOLDING POWER . . .

AFTER 20 YEARS OF OUTSIDE EXPOSURE

BRICK BREAKS

But RAWLPLUG HOLDS!



RAILROAD ELECTRICIAN SAYS:
"I am sending you a sample (see photo above) of what they (Rawlplugs) are capable of doing . . . We were removing some old conduit from an outside wall and this piece of brick was pried off with the 1" conduit used as a lever.

I cannot remember how long these plugs had been installed, but believe it to be between twenty and thirty years."

J. G. COLWALL, Montgomery, Alabama

When you require maximum holding power and the least drilling time (you drill smaller holes) use Rawlplugs.

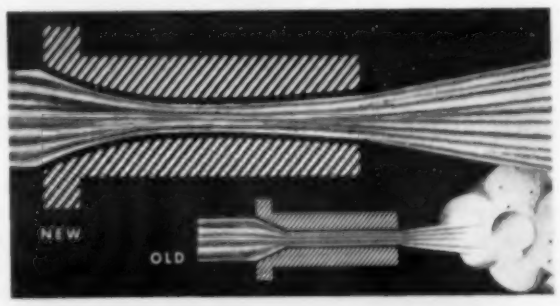
OTHER RAWL PRODUCTS FOR INDUSTRIAL ANCHORING

Write for samples on your letterhead.

RAWLPLUGS	RAWL-CARBIDE DRILLS	RAWLDRILLS
RAWL-DRIVES	RAWL HAMMER-SETS	RAWL-ANCHORS
RAWL-TAPERS	RAWL TOGGLE BOLTS	DIMENSIONAL CHART

THE RAWLPLUG COMPANY, Inc.
271 CHURCH STREET • NEW YORK 13, N. Y.

If you write maker identify as **IEN - 7718**



FOR SAND BLASTING...

In Every Application 25% MORE PRODUCTION

. . . is a proven fact with the revolutionary new Belmont SUPERSONIC nozzle. It's the brand new shape that does the trick — the first important nozzle improvement in years.

ASK FOR FREE DEMONSTRATION . . .

See the SUPERSONIC nozzle in your own shop. The Belmont representative will prove — by actual test with your blast equipment — that you get 25% more production when you use the Belmont SUPERSONIC nozzle. Use the reader service or write to:

Pat. Pending

VACU-BLAST CO. INC.

P. O. BOX 885-P, BELMONT, CALIFORNIA

If you write maker identify as IEN-7719

PORTABLE MIXERS

. . . offer ECONOMY

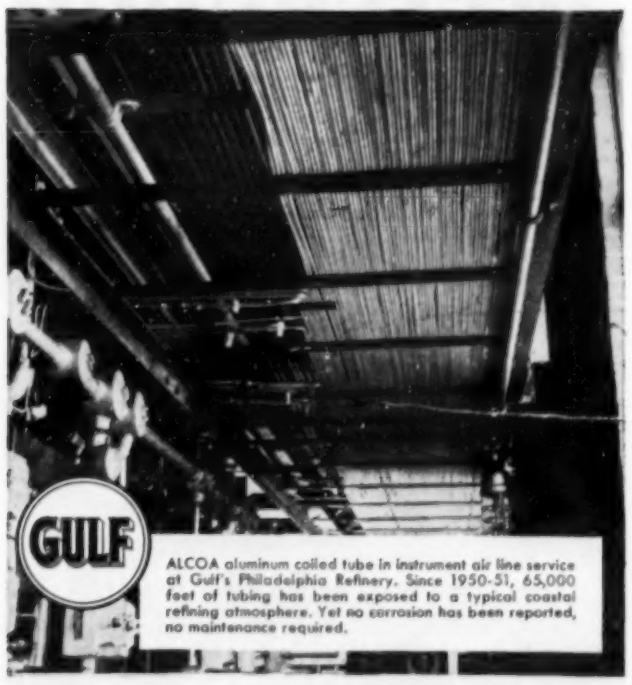
Operating expenses dip to a new low when you choose Portable Mixers from the complete Eastern Series. Available from 1/20 to 5 H.P. with a variety of speeds and motor enclosures. Your small initial investment pays rich dividends in economy.

For complete mixer selection information write for Eastern Catalog 510-B

Eastern INDUSTRIES, INC.

REGENT STREET, E. NORWALK, CONN.

If you write maker identify as IEN-7720



Gulf Oil Corporation cuts cost and corrosion with ALCOA UTILITUBE®

Like Gulf, you too can save from 30 per cent to 60 per cent in tube costs because ALCOA Utilitube costs from 30 per cent to 60 per cent *less* than copper. It has excellent on-the-job forming and flaring properties . . . is available in economical, long lengths up to 1,000 feet or more, depending on size. It stands up well under vibration . . . has high resistance to most industrial atmospheres and to many liquids and gases.

In petroleum service, Alcoa Utilitube will not form sludge or gum . . . will not discolor or contaminate the fluid it carries.

Use Alcoa Utilitube for:

- ★ Pneumatic control circuits
- ★ Gasoline and fuel oil for internal combustion engines
- ★ Lubricating oils for engines and machines
- ★ Fluids for hydraulic systems.

For complete details, write for the new booklet: *Alcoa Utilitube*

ALUMINUM COMPANY OF AMERICA
1005-G Alcoa Building, Pittsburgh 19, Pa.

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

If you write maker identify as IEN-7722

PROTECTING . . Coated fabric glove is particularly resistant to abrasion

Source: EDMONT MFG. COMPANY
1226 Walnut St., Dept. IEN, Coshocton, Ohio

For general use

Green Turtle trade names a new line of plastic coated work gloves. The line includes a palm coated knit wrist unit, a completely coated knit wrist and a completely coated 12-in. gauntlet design. All include fabric liners coated with dark green plastic. The glove is flexible, provides excellent grip and is guaranteed to be liquid proof. The coating will not chip, crack or peel. It is resistant to abrasion.

If you write maker identify as IEN-7723

MOTOR . . Totally enclosed design, fan cooled, frame sizes 182 and 184

Source: STERLING ELECTRIC MOTORS INC.
5401 Telegraph Road, Dept. IEN, Los Angeles 22, Calif.

Specifications upon request

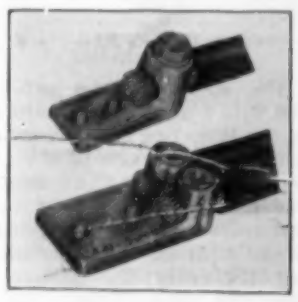
Klosd-Tite designates the company's new line of constant normal speed electric motors built to the new NEMA approved standards. The new design eliminates about 50 per cent of the inactive space in the company's previous similar design. It employs larger bearings per horsepower rating. The bearings are double shielded, pre-lubricated and are equipped with an extra grease reservoir.

New rigid winding design minimizes inactive copper and copper losses. Diagonal type cover boxes can be rotated through a complete circle for assembly in any position. Each box has a threaded hole to take a conduit. The two frame sizes, 182 and 184, are now available as the start of a complete change-over in the Sterling line to incorporate the new NEMA standards. It is expected that all frame sizes will be in production by late 1955. Current models are available.

If you write maker identify as IEN-7724

CONNECTOR . . Solderless terminals designed to take 1 and 2 conductors

Source: JASPER BLACKBURN CORPORATION
35 Madison St., Dept. IEN, St. Louis 6, Mo.

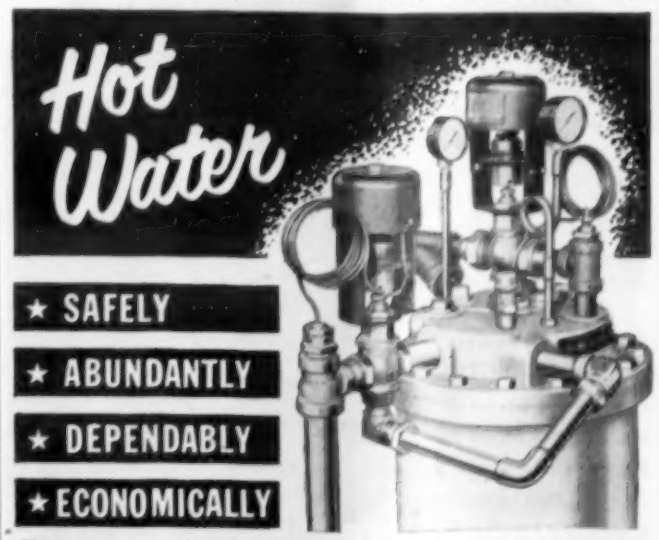


For general use

Multimount for a single conductor and Twinlug for two parallel conductors are new units in the company's line of solderless terminal lugs. Both are made of bronze with machined tangs and are available with hexagon head or socket head screws. The single conductor unit is made in four sizes for wire sizes from No. 4 to 1000 mcm. The double conductor unit is in three sizes for wire from 1/0 to 1000 mcm.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7725



This compact, modern "package" heater will furnish heated water abundantly and economically with exceptional uniformity of temperature.

It is delivered completely assembled, adjusted, tested and ready to install by merely attaching water and steam pipes.

Water for washrooms and showers is delivered at the uniform, safe, regulated temperature of 120° F.

Or, water for scalding purposes can be drawn directly from the tank simultaneously at 160° to 180° F.

Hundreds are in use and highly satisfactory performance has brought many repeat orders.

For better hot water service than you have yet experienced, write for our illustrated bulletin.

THE COE SAFETY WATER HEATER
THE COE MANUFACTURING COMPANY
504 BANK ST. PAINESVILLE, OHIO

If you write maker identify as IEN-7726

How much Vacuum do you need?

It is wise to get a vacuum machine large enough the first time, because you will find so many new uses for vacuum in your plant. Spencer Industrial units start at 1½ HP—run up to 100 HP. For the factory offices, Spencer offers sturdy machines as small as ½ HP. Special vacuum tools for any purpose.

The Spencer representative has application data on more than 130 unusual uses — bulletin on request.

PERMANENT INSTALLATION

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT

SPENCER HARTFORD

466-O

If you write maker identify as IEN-7727

Complete Line of HEAD BLOCKS WINCHES COUNTERWEIGHT SYSTEMS

Loads ranging from a few pounds to 40 tons and more must be hoisted and moved quickly and safely on the theatre stage. The complete line of head blocks, hand and motorized winches and counterweight systems — all standard catalog items — which J. R. Clancy, Inc. has supplied for the stage for 76 years is available to meet the many similar requirements of modern industry.

Send for Catalog

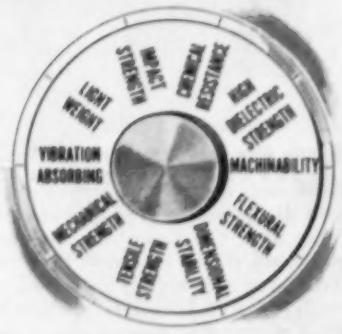
Theatrical Equipment Division

J. R. CLANCY INC.
1020 W. BELDEN AVE., SYRACUSE 4, N. Y.

If you write maker identify as IEN-7728

The Right Combination of Properties in this One Material

• When you seek a material with many properties in combination, you are probably looking for *Synthane*. It's dimensionally stable, tough, machinable, light in weight, chemically resistant, high in dielectric strength, heat and moisture resistant, and practically unbreakable. For full details, see our catalog.



SYNTHANE

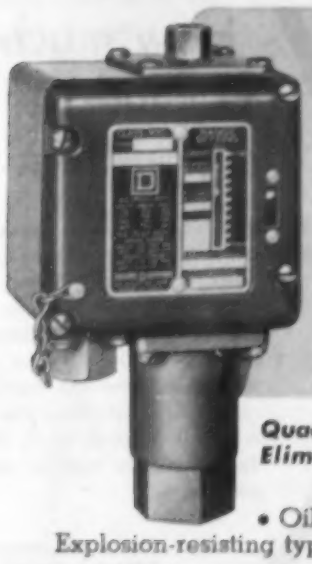
SYNTHANE CORPORATION
SOUTH RIVER ROAD, OAKS, PENNA.

Manufacturers of Laminated Plastics

Please send me a copy of the Synthane catalog.

Name_____
Address_____
City_____ (zone)_____ State_____

If you write maker identify as IEN - 7729



STRAIN RELIEF!

New Industrial Pressure Switch Absorbs Pressure Surges On Hydraulic Systems

Quad Ring Seal (optional) Eliminates Oil Return Line

• Oil-tight enclosure. Explosion-resisting types also available.

• Long-life snap switch mechanism in non-carbon tracking melamine case. 1 N.O. and 1 N.C. contact.

• Range locking nut • Easily adjustable • Dry seal pipe threads.

Write for Bulletin 9012 ADW. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin

SQUARE D COMPANY

If you write maker identify as IEN - 7730

Specify

TIME-TESTED

TAPECOAT®

1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954

. . . the Quality Coal Tar Coating in Tape Form

No need to experiment. Since 1941, TAPECOAT has proved its ability to keep vulnerable steel surfaces "like new" year after year. *That's why it is specified where continuing protection is the first consideration . . .* on pipe, pipe joints, tanks, etc. above ground and under ground. Available in handy rolls in widths from 2" to 24". Easy to apply. Cuts maintenance and replacement costs. Write for details and prices.

The TAPECOAT Company

Originators of Coal Tar Tape Protection

1553 Lyons Street, Evanston, Illinois

If you write maker identify as IEN - 7731

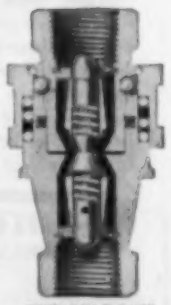
HANSEN

Quick-Connective

TWO-WAY SHUT-OFF COUPLINGS

Female pipe thread connections from ⅛" to 1"

Both ends of line are positively sealed when you disconnect a Hansen Series HK Two-Way Shut-Off Coupling. To connect, just pull back sleeve and push Plug into Socket. To disconnect, merely pull back sleeve. No tools required. Identical valves in Socket and Plug permit free flow of gas or liquid when Coupling is connected—practically eliminate spilling of liquid or escape of gas when disconnected. Available in brass or steel.



SERIES 4-HK TWO-WAY SHUT-OFF COUPLING

Also Straight-Through and One-Way Shut-Off Couplings. Write for catalog.

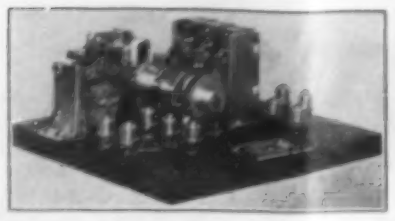
THE HANSEN MANUFACTURING COMPANY

4031 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 7732

TIMING . . Sequence relay, solenoid operated, to 10 circuits

Source: LUMENITE ELECTRONIC CO.
407 S. Dearborn St., Dept. IEN, Chicago 5, Ill.



Assembled to order

Illustrated is a three circuit assembly of the company's new impulse operated multiple circuit relay to control machine operations in sequence or in alternation to meet given requirements. The unit is suited to control the action of pumps, blowers, processes. It can be supplied to assemble a total of 10 separate circuits.

Cams, mounted on a shaft riding in Oilite bearings, operate the switches in desired sequence and at intervals of 5 sec. or more. A change is made each time the circuit to the operating solenoid is closed. This solenoid acts on a ratchet wheel at one end of the cam shaft. The three circuit assembly measures 6 by 7 by 3 inches. The contacts will carry sufficient current for pilot control purposes.

If you write maker identify as IEN - 7733

TESTING . . Vibrating machine to fatigue test small electronic tubes

Source: MB MFG. COMPANY
1060 State St., Dept. IEN, New Haven 11, Conn.

Acceleration to 10G

Vibration frequency can be controlled between 200 and 10,000 cps. with a tube load of 3 gm. with this new electro magnetic vibrating equipment. A sub-miniature electron tube is rigidly clamped in the vibrating armature or a small vibration pick-up or accelerometer is secured to the flat top table for calibration. Vibratory response can be determined as well as ability to withstand severe vibration in service.

Accessory equipment includes an electronic amplifier, a power and field supply and an oscillator, all designed to meet the requirements of high frequency excitation.

If you write maker identify as IEN - 7734

The operator rides safely and with a measure of comfort on the Moto-Bug truck when it is fitted with a new back rest as shown in the illustration. The rest can be specified on new trucks. It can be applied in the field on existing ones. Ask Kwik-Mix Co., 3029 W. Concordia Ave., Dept. IEN, Milwaukee 16, Wis.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7735

New

TO CUT YOUR COSTS!

Select the drive that *REALLY FITS* — no larger — no smaller — from the *NEWEST* most *COMPLETE LINE* of Herringbone Reducers Available Anywhere.

CAPACITIES UP TO 1950 HORSEPOWER

W. A. JONES FOUNDRY & MACHINE CO.
4469 Roosevelt Road, Chicago 24, Illinois

Our NEW Herringbone Speed Reducer Catalog No. 100 is available from your local Jones Representative, or write directly to us. This new approach to speed reducer cataloging is specially designed to help you select with accuracy and confidence the correct Herringbone Gear Drive for your specific application.

Jones *Better Drives . . . Since 1890*

If you write maker identify as IEN - 7736

FAMOUS "CHEM-BOARD"* CONVOY TOTE BOXES

*Chemically Hardened Corrugated Board

SOLD THROUGH LOCAL INDUSTRIAL DISTRIBUTORS

Cost—weigh—50% to 60% less than steel. A wide range of sizes in standard and custom made NESTING, STACKING, VERTICAL TOTE BOXES. Write for complete information, prices, name of distributor in your area.

CONVOY RECORD STORAGE FILES

Sold Only by YOUR LOCAL STATIONER

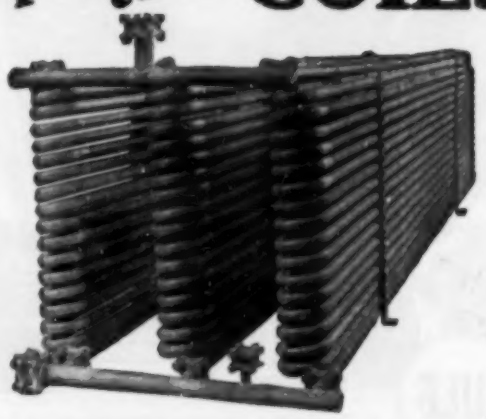
Used by most famous names in industry and businesses of all kinds. CONVOY "CHEM-BOARD" files for record storage made in letter, legal, and 12 other sizes. Stack to ceiling, mate together. Call your local stationer or write for name of stationer nearest to serve you.

CONVOY, INC.
Canton 6, Ohio
P. O. Station B, Box 216-1

If you write maker identify as IEN - 7737

PITTSBURGH

a air p pressure t tested COILS



Pipe Coils — Bends — Boiler Tubes — Skid Pipes

Electrically welded, continuous; Air-Pressure-Tested while submerged in water. Built to your specifications.

— Send for Coil Data Book, and let us quote —

Welded Headers • Welded Ammonia Receivers • Accumulators

Pittsburgh Pipe Coil & Bending Company
Division of Pittsburgh Standard Conduit Co.
61 BRIDGE STREET ETNA, PITTSBURGH 23, PA

If you write maker identify as IEN - 7738

GENERAL CONTROL FOOT SWITCHES

FOOTROL® GENERAL CONTROL FOOT SWITCHES are the recognized leaders . . . for dependable, fast, efficient control of industrial operations.

Type MA FOOT SWITCH

New, light-weight foot switch; actuating treadle operates with unusually light foot pressure. Shaped to fit the average foot; fast operation, minimum fatigue.

REMOVABLE END

Access to internal terminals by simply unscrewing front end.

FOUR STYLES to meet every need:

MA MC MI MB

USE THIS CHART TO ORDER THE EXACT TYPE YOU NEED

TYPES				CONTACT TYPES	CONTACT OPERATION
MA-3 $7.00	MC-13 $6.50	MI-23 $9.80	MB-33 $13.65	C	Double throw Spring return
—	—	MI-33 $11.25	MB-33 $16.25	ACO-C	
—	—	MI-36 $13.65	—	TS-AA	
—	—	MI-37 $15.00	—	3-C	Double pole Double throw Spring return

Add $2.50 to price shown, for foot switch with heavy duty 30-ampere rating.
Add $1.65 to price shown, for foot switch with direct current rating.

Write for Bulletin IN-200

GENERAL CONTROL COMPANY
1200 Soldiers Field Road (Est. 1934) Boston 34, Mass.

If you write maker identify as IEN-7739

"Don't send me flowers, Boss..

"Just put some Anti-Slip Cosmolite on those slippery floors!"

WRITE FOR FREE BOOKLET

NOW you can "cure" those slippery floor problems without special products or costly extra labor. New Anti-Slip Cosmolite does the job. Protects against floor damage. It's applied quickly like ordinary liquid wax. Dries bright. Eliminates unnecessary buffing. Resists water spotting. Sample on request.

Anti-Slip Cosmolite Wax

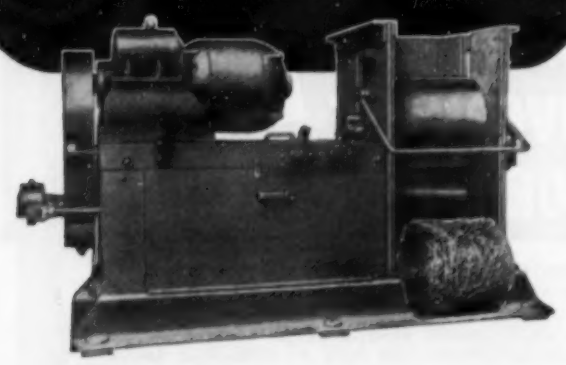
HUNTINGTON LABORATORIES, INC.
Huntington, Indiana • Toronto, Canada

If you write maker identify as IEN-7740

NOW! Bundle Scrap into 18" and 24" Diameter Bundles

EASY TO HANDLE, SHIP, REMELT OR STORE... with the

McLanahan SCRAP BUNDLER



Designed for efficient bundling of scrap wire and strip metals, anything of a stringy nature, the new McLanahan Scrap Bundler "wraps" scrap into compact cylinders for easy handling. Fast and economical in operation, this new machine is the answer to your scrap bundling problems.

Write for new "Scrap Bundler" Bulletin Today!

McLANAHAN and STONE Corp.
Hollidaysburg, Pa. SINCE 1835

If you write maker identify as IEN-7742

MARKING . . Stencil and stamp prints shipping address on container

Source: WEBER ADDRESSING MACHINE CO.
200 W. Central Road, Dept. IEN, Mount Prospect, Ill.

Prevents error

Tab-On designates a new design of the stencil that is now available for use with the company's ink pad stamps, previously described IEN-2093-54. The new stencil has an adhesive strip across its top covered by a peel-off strip. This strip can be removed and the stencil applied, by means of the adhesive, to an invoice, bill of lading or shipping order. It is located directly over the "ship-to" area so the stencil and the paper work can be prepared in one typing. When the "ship-to" address is typed on the stencil it also is printed on the paper beneath the stencil through a special carbon backing on the stencil.

The paper and the stencil are sent to the shipping department after they have been prepared and there the stencil is removed and locked on the printing stamp. Two stamp and stencil sizes take 2 by 4-in. and 3 by 4-in. stencils. Either one can be employed to print a maximum of 7,500 addresses before re-inking. Cost of the stencil is less than 2 cents.

If you write maker identify as IEN-7743

MILLING . . Vertical machine, 75 to 3,000 rpm., 10 by 40 in. table

Source: INDUSTRIAL METAL PRODUCTS CORP.
3405 W. St. Joseph St., Dept. IEN, Lansing 17, Mich.

Bulletin VM-102

The spindle in this new Model 1-B milling machine is driven by a 1-hp. motor with V-belt connection through step sheaves and an adjustable bearing idler and back gears for 20 speeds between 75 and 3,000 rpm. The spindle carries a No. 9 B & S taper. It rides in a 3½-in. quill that is provided with 5 in. of longitudinal travel. This movement can be connected for power feed at a rate between 0.003 and 0.015 in. per revolution. The spindle head is raised and lowered, with reference to the table, on a vertically adjustable counter balanced ram.

The table stands 41½ in. above the floor. It is provided with 24 in. of hand longitudinal movement, 12 in. of transverse movement. Maximum opening, from the table to the spindle nose, is 18¼ inches. Minimum opening is 4½ inches. Distance from the center of the spindle to the ram is 12 inches. Longitudinal movement can be specified for power operation. Machine lubrication is by "one shot" equipment. Floor space is 80 by 51 inches. Weight is 3,100 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7744

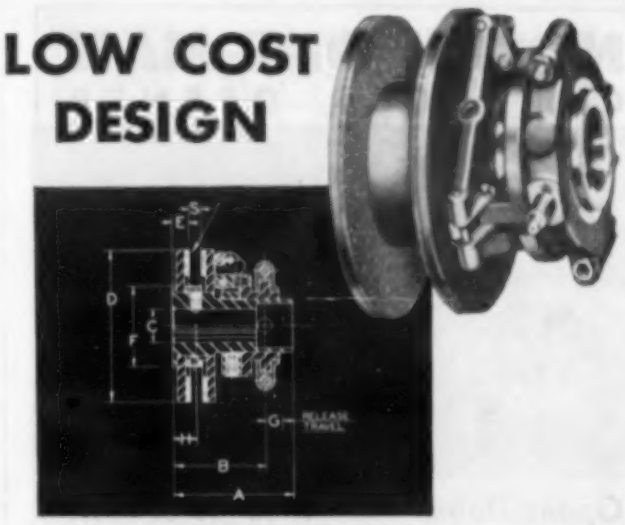
THE 'BIG 3'

Ask your Burndy Distributor

BURNDY
NORWALK • CONNECTICUT

If you write maker identify as IEN-7745

LOW COST DESIGN



Before you approve the blueprint for your next model — double check to make sure it includes the latest improvements you can build into your product with the right type and size ROCKFORD CLUTCH. It will pay you to consult our engineers concerning technical clutch advances that will give you and your customers the advantages of better power transmission control.

Send for This Handy Bulletin

Shows typical installations of ROCKFORD CLUTCHES and POWER TAKE-OFFS. Contains diagrams of unique applications, Function capacity tables, dimensions and complete specifications.

ROCKFORD CLUTCH DIVISION BORG-WARNER
303 Catherine Street, Rockford, Illinois, U. S. A.

ROCKFORD CLUTCHES

If you write maker identify as IEN-7746

DeVilbiss Hose LASTS LONGER

Specially compounded materials — special braiding of select yarns — special processing and testing give you a *premium* quality hose that costs less in the long run. DeVilbiss fluid hose is unsurpassed for resistance to solvents and oils of all types. Air hose is unmatched for its flexibility, wear resistance and kinkproof construction. All this means better service — fewer failures and less replacement. *Buy the best* — buy DeVilbiss. Write for full details.

DEVILBISS

THE DEVILBISS COMPANY
Toledo, Ohio

Santa Clara, Calif. • Barrie, Ontario • London, England

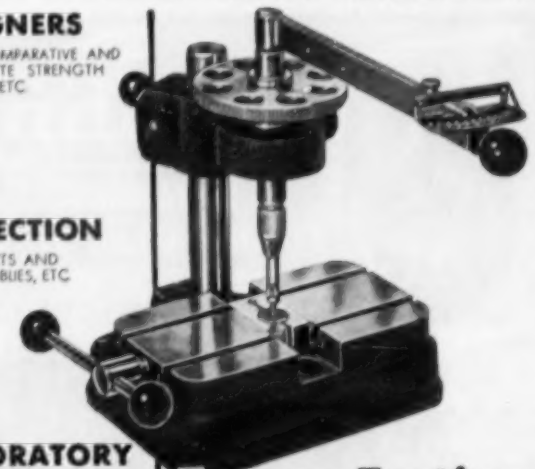
If you write maker identify as IEN-7747

DESIGNERS for COMPARATIVE AND ULTIMATE STRENGTH TESTS, ETC.

INSPECTION of PARTS AND ASSEMBLIES, ETC.

LABORATORY TESTING of SCREWS, SOCKETS, TAPS, LOCK NUTS, DRIVING BITS, HAIR SPRINGS, ETC.

PRODUCTION QUALITY CONTROL for DELICATE OPERATIONS, ASSEMBLY OF FRAGILE MECHANISMS OR INSTRUMENTS, FOR FASTENERS IN PLASTICS AND LIGHT METALS.



Torque Testing FIXTURE

A universal fixture with 1000 uses. Holds driver in accurate alignment; in instrument bearings. Provides rapid engagement with test sample...torque is applied and measured with Sturtevant Torque Wrench.

Model TTF¼ Capacity 0-200 in. lbs.
Model TTF½ Capacity 0-150 ft. lbs.

Write for Bulletin TF

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

If you write maker identify as IEN - 7748

NOLAN ONE-MAN CAR DOOR OPENER

Opens Doors in 20 seconds or less!

The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry! New chain has 2000 lbs. tensile strength.

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

New safety features make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.

Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$37.50 F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as IEN - 7749

B.F.Goodrich

FREE TIRE AND WHEEL ANALYSIS can solve your tire problems, reduce costs 20-50%

The B. F. Goodrich Tire and Wheel Analysis Plan has reduced industrial tire costs 20 to 50% for hundreds of users. This free service can help cut *your* tire and tire maintenance costs. Contact your local BFG retailer or mail the coupon below. Without cost or obligation a trained B. F. Goodrich man will study your materials handling operations. He will tell you what type and size tire, what tread design and compound will serve you best. The advice you receive will be unbiased, for B. F. Goodrich makes a *complete* line of industrial tires. A special TW Analysis is available for manufacturers of industrial hauling equipment.

Here is an example of premature tire failure. BFG's TW Analysis shows you the reasons for such failures, prevents reoccurrences.

Free recommendations. The TW analysis man is an expert. His study and recommendations can help you reduce tire and tire maintenance expense.

The B. F. Goodrich Company
Tire & Equipment Division
Department TW-595, Akron 18, Ohio

Please send me:

- ☐ Additional information on your Tire and Wheel Analysis Plan
- ☐ Free copy of "Industrial Tire Guidebook"
- ☐ Free copy of "How to Get Extra Service out of Solid Industrial Tires"

Name_____
Company_____
Street_____
City_____ Zone____ State____

Specify B. F. Goodrich tires when ordering new equipment

If you write maker identify as IEN - 7751

PACKAGING . . Two head bagger for lemons, oranges, onions, potatoes

Source: FOOD MACHINERY & CHEMICAL CORP. 3075 12th St., Dept. IEN, Riverside, Calif.

Brochure, "Bagging Tables"

Weighing scales with "over" and "under" dials are set for a predetermined produce weight on the two independent heads on this new machine. Bags are positioned beneath the feed chutes and the machine is started. Its two belt conveyors feed from a hopper at the rear to bring the produce to the bags until the predetermined weight has been reached.

At this point solenoids operate rubber tipped gates that rise to stop further flow from the hopper until empty bags have been placed and the control actuated. One type of produce can feed to both bags or the hopper can be divided to feed two types separately.

If you write maker identify as IEN - 7752

WELDING . . Granular flux and wire to arc weld stainless steel

Source: ARCOS CORPORATION 1500 S. 50th St., Dept. IEN, Philadelphia 43, Pa.

No element loss

Arcosite flux and Chromar stainless steel wire have been developed by the company for submerged arc welding of stainless steel without danger of cracking or poor transfer of the essential stainless elements. The flux and wire together provide metallurgically controlled weld metal composition suitable for use on chromium-nickel, straight chromium and chromium-molybdenum stainless steels.

The flux is controlled for size so practically all will pass through a 14-mesh screen and will be held on a 100-mesh screen. The wire is available in 17 different compositions in level layer spools, coils, straightened and cut bundles. Standard coils have an inside diameter of 12 in. and a width of about 2½ inches.

If you write maker identify as IEN - 7753

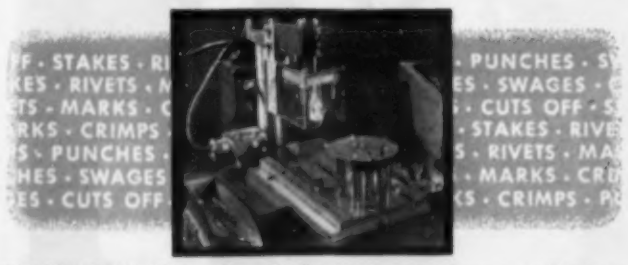
Neoprene tires are now available from Rapids-Standard Co., 342 Rapistan Bldg., Dept. IEN, Grand Rapids 2, Mich., to apply on the metal wheels of its wheel type conveyors. The tires cushion fragile materials, absorb shock and cut down on noise of handling. The tires can be ordered separately for use in wheel equipped sections now in the field. When they are applied on one or two outside rows of the wheels, on a curve section, they keep materials aligned. The ribbed tire design keeps slippery cartons or slick sheet materials from shifting in transit. Each tire snaps into position on a wheel.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7754

ELECTROPUNCH SAVES TIME

for Telechron Clocks!



ELECTROPUNCH — the all-electric impact hammer, fastens front plates to Telechron clocks 575% faster! Here's how: — the assembly, after being positioned, is simply slipped under the ELECTROPUNCH, tripping a limit switch that automatically cycles the work stroke. Total time: 1.93 seconds — as compared to the 11.10 seconds previously required for fastening with a power-driven screwdriver.

Delivers impacts up to 10,000 lbs. — up to 125 blows per minute! Economical to buy, operate and maintain — adaptable to wide range of applications. Operable from 115 V., A.C. outlets.

Write — or phone BIgelow 4-6370 — for folder showing complete line of Black & Webster electric production tools.

BLACK & WEBSTER, INC.

Dept. 17, 445 Watertown Street, Newton 58, Mass.
Solenoid-operated Production Tools

If you write maker identify as IEN - 7755

To control AIR . . . ANYWHERE use NP Control Valves

INVESTIGATE National Pneumatic Co., Inc.'s wide range of air control valves, from 0 to 125 p.s.i. with ¼" porting, in 3 way and 4 way types. NP valves are modern in design, ruggedly constructed and require minimum maintenance.

PILOT CONTROL VALVE
Offers automatic retraction or continuous cycling when used in a system incorporating remote control valves.

DC-31810 HAND OPERATED CONTROL VALVE
Simple design for long, dependable service. Sturdy construction, easy action.

DC-39970 FOOT OPERATED CONTROL VALVE
Rugged, sure, dependable action. Pedal housing assures *safe* operation.

THERE IS AN NP VALVE for every air-control job. In addition to the valves shown here, NP also makes the following types of valves: Pressure regulating; speed adjusting; quick release; ratchet. Write today for bulletins to Industrial Actuators and Controls Division.

NATIONAL PNEUMATIC CO., INC. AND **HOLTZER-CABOT** DIVISIONS

125 Amory St., Boston 19, Mass.
Sales Service Representatives in Principal Cities throughout the Free World

Designers and manufacturers of mechanical, pneumatic, hydraulic, electric and electronic equipment and systems

If you write maker identify as IEN - 7756

Write for 32 Page Catalog

- Pump Controls
- Duplex Pump Alternators
- High and Low Level Cutoffs
- High and Low Level Alarms
- Multi-Level Signals
- Liquid Metering
- Special Controls and Panels

Listed by Underwriters Laboratories

CHARLES F. WARRICK CO.

1965 W. Eleven Mile Road
Berkley, Mich.

Warrick FLOATLESS LIQUID LEVEL CONTROLS ELECTRODE TYPE

If you write maker identify as IEN - 7757

First Choice LIVERMONT TORQUE WRENCHES

for every industrial use

LIVERMONT TORQUE WRENCHES are years ahead — in streamlined design, in rugged construction, in hair-line accuracy, dependability and range of capacities. There are no clumsy, external gauges or "gadgets" to hamper use of Livermont tools . . . Patented, torque controlling mechanisms are self-contained. So Livermont wrenches are balanced — as easy to use as conventional wrenches.

No matter what your torque requirement — from one inch-ounce to 5000 inch-pounds — there is a Livermont tool to solve the problem.

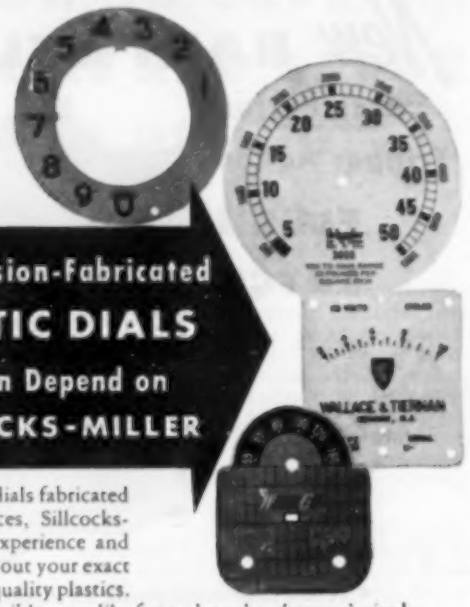
(Right) Livermont's new **"HI-LO TORQ."** Only torque wrench on the market with adjustable and reversible ratchet head! 16 models. 10 to 500 foot pounds. Also plain square drive.

(Left) Livermont's new **"ROTO-TORQ."** A screwdriver that torques down to 4 inch-ounces. A precise, dependable, long-life tool for electronics or similar assemblies. Fits over 50 standard bits and sockets.

Write Dept. IEN for illustrated price catalog. Over 100 styles, models and capacities.

RICHMONT, INC. "The Home of Torque"
922 MYRTLE AVENUE, MONROVIA, CALIFORNIA

If you write maker identify as IEN - 7758



For Precision-Fabricated
PLASTIC DIALS
You Can Depend on
SILLCOCKS-MILLER

When you need dials fabricated to close tolerances, Sillcocks-Miller has the experience and facilities to work out your exact requirements in quality plastics.

Plastics are flexible—readily formed to the shapes desired. They offer unlimited colors. They can be printed or silk screened—and when laminated provide complete protection to the message. Where temperature or weather are factors, there are plastic materials to meet your needs. And they keep their attractive finish and appearance.

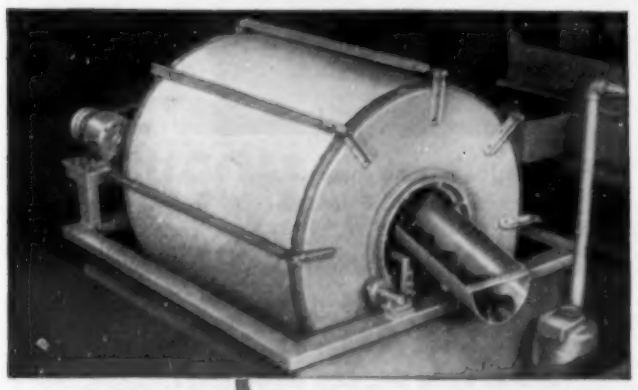
Put your dial problems in the hands of these specialists for the most practical answer. Write for details today.

The SILLCOCKS-MILLER Company
Pioneers in Plastic Fabrication since 1910

27 West Parker Avenue • Maplewood, N. J.

If you write maker identify as IEN - 7759

The MURRAY WAY
INDUSTRIAL FILTER



a revolutionary development in solution reclamation that gives you these money-saving features!

- **AUTOMATICALLY OPERATED**
- **SELF-CLEANING**
- **ECONOMICAL**
- **COMPACT**
- **ADAPTABLE**

The Murray-Way Industrial Filter automatically rotates fresh filtering area into position while simultaneously ejecting the contaminant. With this new unit costly consumption of throw-away filtering media is eliminated since the wire filtering screen has many times the life of cloth filtering webs.

The Murray-Way Industrial Filter is a compact unit. It offers unusually great filtering capacity in proportion to area occupied. Amazingly adaptable, the Murray-Way Filter may be used with an individual machine unit or as a central filtering station for many units. Capacity of filtration may be easily increased by adding filters in tandem—separately or in the same tank, to meet requirements. A selection of filtering screen material and size of screen opening can be supplied in monel, stainless steel, brass or bronze to fit your requirements.

For technical details of operation—write for Bulletin F-5301.

other Murray-Way equipment
- Micro-Polish Equipment
- Polishing and Buffing Conveyors
- Automatic Dial Tables
- Standard and Special Polishing Heads
- Specially Engineered Automation
- Automatic Loaders and Unloaders

MURRAY WAY CORPORATION
POST OFFICE BOX 180—BIRMINGHAM, MICH
AUTOMATIC POLISHING, BUFFING, GRINDING, FILTERING EQUIPMENT

If you write maker identify as IEN - 7761

PRINTING . . Electrostatic equipment makes offset paper duplicator masters

Source: HALOID COMPANY
2-29 Haloid St., Dept. IEN, Rochester 3, N. Y.

For office use

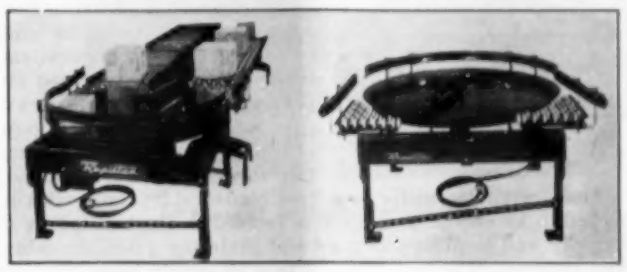
New equipment has been developed for the company's XeroX Lith-Master copying equipment with which paper masters, for offset duplicator use, can be prepared from originals containing both halftones and line copy. Examples are catalog sheets, price lists, bulletins, magazine articles. The new equipment consists of a camera, a processor and a fuser for size-to-size copying of 8½ by 13 in. of material with text or images on both sides of any kind of paper. A second camera is available for reduction to 50 per cent or enlargement to 150 per cent of original size copy onto an 8½ by 13-in. XeroX plate. The copy board, in this case, holds copy measuring to 17 by 22 inches.

The process, known as Xerography, is a dry direct positive electrostatic reproduction that operates without film, dark room or sensitized materials. Reproduction results from cascading a black resinous powder over the electrostatic surface of a treated plate. Then it is processed in the copier where the image is transferred to the paper and made permanent by fusing for a few seconds. A master and multiple copies can be made in about three minutes.

If you write maker identify as IEN - 7762

CONVEYING . . Power turntable transfers cartons between two lines

Source: RAPIDS-STANDARD COMPANY
342 Rapistan Bldg., Dept. IEN, Grand Rapids 2, Mich.



Receives and delivers in either direction

Steel plate, measuring $\frac{3}{16}$ in. in thickness by 48 in. in diameter, rides on four rubber wheels in this new Type-TT turntable. It is friction driven by a rubber faced wheel that contacts the inner side of a steel reinforcing ring welded to the underside of the disc. Power is supplied by a ½-hp. motor for operation at about 175 ft. per minute.

The turntable takes cartons measuring 22 by 18 in., 24 by 14 in. or 20 by 20 inches. It handles packages too small to transfer successfully on power curves. It feeds from one conveyor line and back to another located at 90 or 180 deg. around the circle.

Work, feeding to and from the table, is kept in alignment by wheel feeder sections which can be placed at any two corners of the frame. The motor is equipped with reversing control.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7763

Protect

Expensive GAGES

Sprague Shut Off Valves automatically cut out gages and other pressure-sensitive instruments when fluid pressures go beyond their operating limits. Automatically open when pressure is again within approx. 80% of set cut-out points. Available for any pressure setting between 10 PSI and 5000 PSI.

Save valuable man hours. Eliminate opening and closing manually operated shut off valves. Supplied with standard pipe thread connections, also available with AN tube fittings. Body is 1½" aluminum hexagon stock. Length 5½". Bronze or stainless steel bodies also available. Easy to install. Thousands in use. Write for bulletin.

SPRAGUE
Engineering and Sales Corp.
1144 WEST 135TH ST., GARDENA, CALIF

If you write maker identify as IEN - 7764

BARBER COLMAN

Barcol® Radio-Controlled
OVERdoors
operate from moving vehicle

To speed plant traffic or save heat, use Barcol door controls . . . truck operators can open and shut doors by radio without stopping. Also available with pull-cords or convenient wall switches. Exclusive cam closing action on your Barcol OVERdoor assures weather-tight fit yet easy operation. Barber-Colman also makes operators for swinging or sliding doors and sliding gates. Installed, guaranteed and serviced by your Barcol distributor. Look under "Doors" in phone book.

BARBER-COLMAN COMPANY, DEPT. V47, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 7765

HEAVY PLATE FORMING FASTER with STEELWELDS

Because of simplicity of operation, heavy steel parts can be turned out quickly and accurately on Steelweld Bending Presses. Their heavy quality construction, including solid one-piece frame, finest electrical equipment and automatic oilers for lubrication of all bearings, keep Steelweld Press maintenance extremely low and assure uninterrupted production.

STEELWELD BENDING PRESSES CATALOG No. 2010

Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO.
4254 East 281st St., Wickliffe, O.

STEELWELD PRESSES

If you write maker identify as IEN - 7766

CLEMENTS
Cadillac
PORTABLE ELECTRIC
COMBINATION BLOWER-SUCTION CLEANER

This versatile blower, available with attachments, can be quickly converted for handling a broad variety of maintenance tasks (suction cleaning, spraying, etc.) and for many special production jobs, such as preheating, bending, annealing, and soldering.

COSTS LITTLE TO BUY, COSTS LITTLE TO USE, SAVES A LOT!

CLEANS FASTER EASIER . . . BETTER

MADE IN 5 MODELS 1 H.P., 2 SPEEDS ILLUSTRATED

Save your equipment. Remove dirt, dust, grit, filings from every crack and crevice before they damage your machinery, decrease its efficiency. You'll reduce repairs, replacements, down-time, with this powerful cleaning tool.

Ask your mill supply dealer for a demonstration, or write us for information.

"Most Useful Tool in the Plant"

CLEANS MACHINERY • MOTORS • TOOL ROOMS • STOCK BINS
CLEMENTS MFG. CO., 6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.
USED BY BUSINESS AND INDUSTRY FOR MORE THAN 44 YEARS

If you write maker identify as IEN - 7767

Severance CHATTERLESS TOOLS HIGH SPEED CARBIDE

Winning their way on job after job, they are carefully designed to preclude chatter and can be depended on to produce superior finishes.

• • • • •

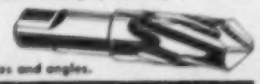
Severance CHATTERLESS COUNTERSINKS

STANDARD TYPE — Stocked in 13 diameters up to 2" and in 30°, 41°, 45°, and 60° angles (with C/L).

Sizes 1" and larger stocked also threaded for shanks — tapered or straight — in various sizes.

Use CARBIDE for tough jobs or high production.

HEAVY DUTY TYPE — Features larger shanks having a tang drive. Full range of sizes and angles.

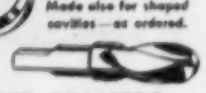


HEADQUARTERS FOR COUNTERSINKS, REAMERS, SEATING TOOLS, and SPOTFACERS that preclude chatter

Severance CHATTERLESS BALL SEAT REAMERS

Standard and Heavy Duty Types 8 sizes each. Made also for shaped cavities — as ordered.

BALL NOSE DRILLS — In corresponding sizes hog out the stock for Ball Seat Reamers.



Severance TAPER REAMERS

- Faster cutting
- Better finishing
- Shear-cut teeth

Tapers up to 75° quickly supplied from stock — up to 1½" diameter x 2½" long.

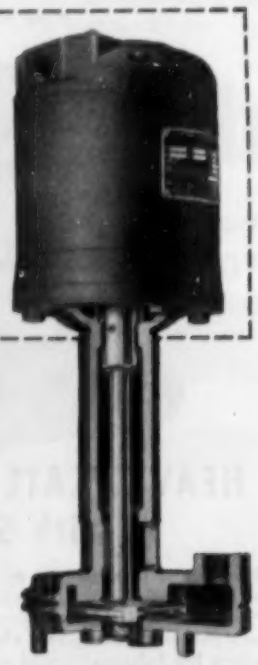
Unexcelled for holes having keyways, ports, splines, cross holes, etc.

Write for Catalog

SEVERANCE TOOL INDUSTRIES, INC.
740 Iowa Ave. Saginaw, Michigan

If you write maker identify as IEN - 7768

Motor-Driven Centrifugal Pumps That Dirt Can't Hurt!



Here's a complete line of ten different Motor-Driven Centrifugal Pumps that are completely protected from damage by dirt or abrasives. Hydraulically balanced, their design eliminates metal-to-metal contact below water level. Motors are of standard NEMA design, for easy replacement, and totally enclosed against dust or vapor.

You'll find that the design simplicity and sound construction of these Brown & Sharpe Pumps make them ideal for countless applications where grit or foreign substances may be present. Write for Pump Catalog. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

BUY THROUGH YOUR LOCAL DISTRIBUTOR

Brown & Sharpe B·S

If you write maker identify as IEN - 7769

RELY ON **Morton** FIXTURE CLAMPS and COMPONENTS

BACKED BY 30 YEARS OF FINE TOOL MAKING

● *Immediate Delivery on STANDARDS!*

For Instructive, Illustrated Catalog containing full size tracing templates of each product.

Standards can be modified to suit your application.

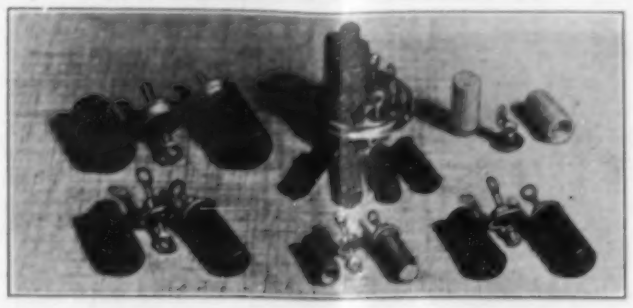
Largest assortment in the industry . . . Highest quality of workmanship and materials maintained. Save time, labor, tool and design costs with MORTON.

MORTON MACHINE WORKS
2421 WOLCOTT ST. • DETROIT 20, MICH.

If you write maker identify as IEN - 7770

PAINTING . . Cap type masks keep terminals free from paint spray

Source: BY-BUK COMPANY
4314 W. Pico Blvd., Dept. IEN, Los Angeles 19, Calif.



Samples available for specified terminals

Plastic masks, from which paint can be stripped when it has dried, and balsa wood masks, for one-time use, have been added to the company's line of tape masks to cover assembly parts that must be kept free from paint during spray finishing operations. The new plastic and wood units are available for all sizes of single terminals. They fit snugly to cover the surface of the glass insulation. They provide sufficient grip so they will remain in position and paint cannot leak in under their edges.

If you write maker identify as IEN - 7771

DRILLING . . Pneumatic tool weighs 1½ pounds, rates 3/16 inch

Source: ARO EQUIPMENT CORP.
109 Madison St., Dept. IEN, Bryan, Ohio

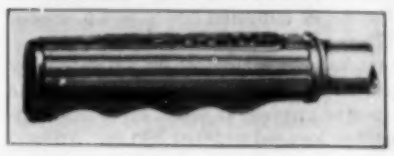
Model 7512

The spindle in this new miniature portable pneumatic drill is mounted at the front and rear on ball bearings and is fitted with a 3/32-in. chuck. A ¼-in. chuck can be specified when the drill is to be employed in light duty operation. Planet gearing is mounted on Torrington needle bearings. An oiler is built in. The pistol grip handle is made of aluminum. The throttle provides control.

The pneumatic motor is a five blade rotary unit with a locked-in assembly. The motor is located in the housing by a keyway and locating pin in an end plate for quick assembly and removal. The tool connects to a 3/32-in. air hose.

If you write maker identify as IEN - 7772

Change-O-Name is a new molded plastic handle grip on which name, trade mark or insignia can be molded integrally to specification. The molding tools are made so an insert goes into place and the only tool charge is for the single added piece. The grip fits a ⅞-in. bar. Vinyl plastic is the material. Ohio Rubber Co., Dept. IEN, Willoughby, Ohio can supply you.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7773

Space Savers

SPLIT BALL BEARING BUSHINGS

. . . giving both radial and thrust capacity

They have solved many design and operation problems. . .

SHEAVES FULCRUMS IDLERS
CAMS OSCILLATING MOTIONS

Shaft rotation at moderate speeds.
Lubricated for extended operation.
Only a quarter inch section height.
For shafts from 7/16" to 1½".

Ask for folder giving sizes and load capacities. Call on our Engineering Department for advice and help on your applications.

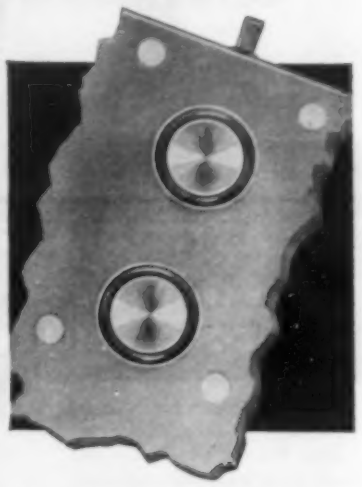
SPLIT BALLBEARING CORP.
LEBANON NEW HAMPSHIRE

If you write maker identify as IEN - 7774

New HARTWELL

Push Button
Trigger Action

FLUSH LATCH



MODEL H-2

- A new latch development for modern equipment. Combines the desirable features of push button operation with the positive simplicity of trigger action in a small, rugged, lightweight yet inexpensive flush latch.

Available in many offset combinations for various door and frame thickness arrangements. Standard with or without gaskets in stainless steel or cadmium plated cold rolled steel.

Write for new 1954 Flush Latch Catalog

HARTWELL COMPANY | *Manufacturer of Flush Latches and Hinges, Fittings and Cable Terminals*
9035 Venice Blvd., Los Angeles 34, Calif.

If you write maker identify as IEN - 7775

HAND HYDRAULIC PUMP

Single and Double Designs to 20,000 PSI

With or without Reservoir

Standard Reservoirs 70, 160, 910 Cu. In. Capacity

Interchangeable Pistons ⅜-½-¾ Inch

1-Inch Piston (Special)

Pipe connections 1¼" N.P.T.

Handle length is 18 inches

Unit can be bolted or welded into position

"We specialize in hand pump units to operate in temperatures from minus 65° F to plus 160° F and with any capacity reservoirs required."

The single pump with ½" or ¾" piston now available in stainless steel.

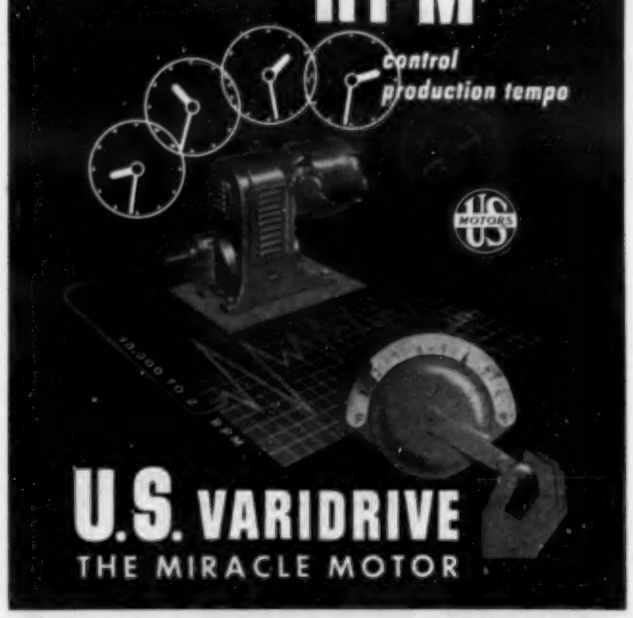
WILLIAM S. PINE
1635 E. 22nd St., Los Angeles 11, Calif.

If you write maker identify as IEN - 7776

Get this Bulletin

VARIABLE RPM's

control production tempo



U.S. VARIDRIVE
THE MIRACLE MOTOR

With infinite variable speeds, The U. S. Varidrive Motor will boost your production, increase operator's efficiency and produce better quality work. 2 to 10,000 r.p.m. ¼ to 50 hp. Request new Bulletin.

U. S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 54, Calif. Milford, Conn.

If you write maker identify as IEN - 7777

HOW TO SAVE MATERIAL AND LABOR IN PIPING LAYOUTS

Here is a special fabricating service designed to save time, material and labor in piping systems. By eliminating numerous flanged joints and combining several fittings into one integral unit, as illustrated, Naylor fabrications provide the answer for greater efficiency and economy.

All types of materials can be fabricated accurately to your specifications. Sizes range from 3" to 44" in diameter and wall thicknesses up to ⅜".

Naylor Bulletin No. 525 presents helpful information on this special service. Write for your copy today and submit your problem for recommendation and quotation.

NAYLOR PIPE

Naylor Pipe Company • 1235 East 92nd St., Chicago 19, Illinois
Eastern U.S. and Foreign Sales Office 350 Madison Ave., New York 17, N.Y.

If you write maker identify as IEN - 7778

DOCKSON REGULATORS

Built for Better Service

STURDY CONSTRUCTION—Forged brass bodies, shatterproof gauges, dependable safety valves.

LOW COST—Replaceable, self-aligning seats; minimum of moving parts.

GUARANTEED—Against defects in materials or workmanship for one year in regulator proper.

YOUR DOCKSON DISTRIBUTOR—a selected specialist, stocks a complete line of Dockson products to give you fast service and personal attention. We back our distributors 100%.

WRITE FOR YOUR DISTRIBUTOR'S NAME AND OUR COMPLETE CATALOG OF WELDING AND CUTTING EQUIPMENT.

Dockson CORPORATION
3839 Wabash Ave.
Detroit 8, Mich.

If you write maker identify as IEN - 7780

DUST COLLECTING . . Electrostatic unit for application in an air flow duct

Source: ELECTRIC-AIR CLEANER CO.
1285 Reedsdale St., Dept. IEN, Pittsburgh 33, Pa.

Bulletin C-10-4154

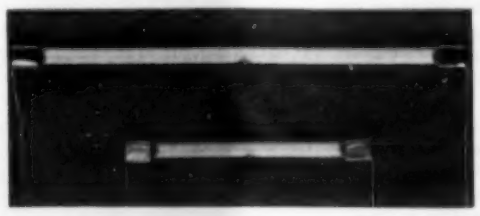
Particles of dust, soot, pollen, plant spores, are ionized upon entrance with an air stream into this new Electro-Air dust collector. The ionized particles are attracted to and are held on aluminum plates until they are washed off at intervals by opening a valve to admit hot wash water to a built-in manifold. The dirt free air passes through a dry type filter panel that distributes the air evenly across the collector plates and keeps the water wash spray from entering the distribution duct. The panel also acts as an emergency impingement filter in the event of power failure.

Six sizes in the line rate 800 to 2,400 cfm. at 90 per cent efficiency with air flow resistance at 0.1 in. of water. Width ranges from about 26 to 38 inches. Depth is about 24 inches. Height, with mounting legs, is 28 to 46 inches. Operation is on 110-volt ac. with input at 30 to 60 watts to the selenium power pack that provides high voltage current for the ionizing and collecting action.

If you write maker identify as IEN - 7781

HEATING . . Infrared lamp with tungsten filament in quartz tube

Source: GENERAL ELECTRIC CO.
1 Nela Park, Dept. IEN, Cleveland 12, Ohio



At present in limited production

Outside diameter of this new infrared heating lamp is about ⅝ inch. Overall length for the 500-watt size is 6¾ in. to provide 5 in. of "lighted length". The companion 1,000-watt lamp measures 11¾ in. in length. The smaller unit operates on 110 and the larger on 230-volt circuits. Weights are ¾ and ⅞ oz. respectively. Rated burning life is 5,000 hr. or more.

The translucent quartz in the tube is resistant to thermal shock to a point where it can be heated cherry red and then immersed in water or touched to ice without cracking. The quartz has a melting point of about 3,200 deg. F. It also is resistant to attack by acids. Both units produce full radiation almost instantly and combine visible light with infrared radiation. Applications include drying, baking, space heating and built-in operation in various types of appliance. List prices are $7 and $8.50.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7782

THE FIRST TRULY ENGINEERED SAFETY GRATING SOLVES SKIDDING PROBLEMS

Positive Footing

Bustin FIRM-GRIP

- Cuts Down Accidents
- Eliminates Danger Spots
- Improves Efficiency

No other serrated grating gives you all the features of Bustin FIRM-GRIP. Its unique assembly and engineered spacing of contact points results in an absolutely safe, easy-on-shoes and to-stand-on, full foot support treading surface, even when completely submerged in grease. FIRM-GRIP does not grab or drag under foot. Tripping is a remote possibility due to its close honeycomb design.

This positive footing multi-feature safety grating specially ends skidding and slipping accidents . . . cuts down insurance costs . . . and raises all-around plant efficiency. Where *other grating products fail . . . try BUSTIN FIRM-GRIP for positive results.*

*Pat. Pending

Bustin Write for Complete Literature
FIRM-GRIP GRATING CORP.
Dover, New Jersey Dover 6-5800

"BUSTIN—Designers and Manufacturers of Metal Products Since 1928"

If you write maker identify as IEN - 7783

HEVI DUTY ELECTRIC COMPANY

HEVI DUTY *Multiple Unit*

HOT PLATES

built for continuous operation.

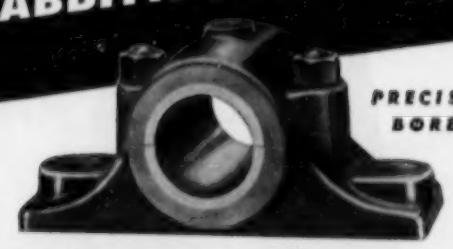
Hevi Duty Hot Plates are constructed to give you heavy duty trouble free service. The metal top plate is resistant to warpage. Coiled wire elements are protected in refractory holders so located as to give a uniform heat over the entire top surface. Controlled temperatures up to 750° F. Seven standard sizes are available from stock.

Write for Bulletin LAB-835.

HEVI DUTY ELECTRIC COMPANY
LABORATORY FURNACES MULTIPLE UNIT ELECTRIC EXCLUSIVELY
MILWAUKEE 1, WISCONSIN

If you write maker identify as IEN - 7784

DODGE BABBITTED BEARINGS



PRECISION BORED!

TRUE RUNNING!

DEPENDABLE!

● There's a *big* difference between a Dodge Journal Bearing and a common flat box — a difference that pays off in longer years of service, smoother operation, power savings! Dodge Journal Bearings are precision bored and faced — to insure maximum bearing surface for radial and thrust loads . . . Solid or Split Journal. Shaft sizes from 1/2" to 3-15/16". Stocked by Dodge distributors. Write us for full details.

DODGE MANUFACTURING CORPORATION, 608 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.
FIRST IN POWER TRANSMISSION MACHINERY

If you write maker identify as IEN - 7785

Drill
CONCRETE
TILE
CERAMICS
GLASS
GRANITE
BRICK
IN SECONDS
with the

TRUCO WATER SWIVEL and TRUCO DIAMOND DRILL BITS

Same type Truco diamond bits long used in mining and oil well drilling are now available for drilling holes ¼" to 6½" I.D. any depth. Truco Diamond Drill Bits in Truco Water Swivel can easily save entire cost on first application. For electricians, plumbers, carpenters, masons, tile setters, maintenance crews, etc. Booklet and price list by return mail. Write;

WHEEL TRUEING TOOL COMPANY
48-3200 West Davison Avenue • Detroit 38, Michigan

If you write maker identify as IEN - 7786

2000...6000 PSI HYDRAULIC PRESSURE
From Your Shop Air Line

With this WATSON-STILLMAN Double Acting Air Engine Pump

A compact, lightweight hydraulic pump for many applications:

- For Hydrostatic testing
- As a pumping unit for all types of hydraulic service
- To operate hydraulic jacks or machinery
- To fit your special hydraulic applications

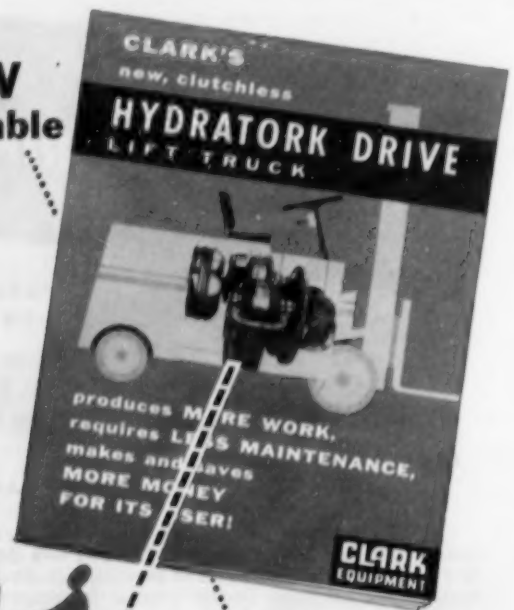
Simply connect the pump to your shop air line or field compressor. Operates on pressures from 50 to 150 psi.

Write today for Bulletin A-5

WATSON-STILLMAN FITTINGS DIVISION
H. K. PORTER COMPANY, INC.
Roselle, New Jersey

If you write maker identify as IEN - 7787

NOW available



Send for FREE booklet

Clark's HYDRATORK DRIVE Carloader

The revolutionary HYDRATORK DRIVE lift truck is now available in Clark's 3000-5000 lb. Carloader. The new clutchless, torque converter transmission has already won many friends among users of Clark's 6000-7000 lb. Utilitrucs. The basic benefits of this Clark-built transmission are:

1. **Lower cost:** no gear clash, no clutch problems, excellent serviceability.
2. **More power:** faster, smoother get-away; better gradability.
3. **Less driver fatigue:** finger-tip direction control, no clutching or shifting.

The free booklet shows detailed dis-assembled views of the HYDRATORK DRIVE, explains how it works. Clip the coupon to your company letterhead and we'll send it to you.

CLARK EQUIPMENT

Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 49, Michigan

☐ Send HYDRATORK DRIVE booklet

Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-12

We quote from a letter mailed last month by W. C. Scoltock, Subscription Manager for Thomas' Register, to all the companies that purchased one or more copies of the "big book" for 1954—

"While I am not 99 per cent certain that the enclosed effort to buy back from you a copy of the 1954 Thomas' Register is superfluous, I am nevertheless mailing this appeal broadcast, to avoid missing even the one chance. Our supply of the 1954 edition is entirely exhausted and I am receiving subscriptions daily for additional copies from Government purchasing offices and highly rated private industries. Our edition this year, 23,000, was the largest ever . . . but the demand still exceeds the edition. If you have a copy you can spare, in line with our enclosed suggestion, please inform me promptly."

Last year, about a dozen copies were returned for refund. Mr. Scoltock expects the count to be the same this year and already has started arrangements with our connection, Specialty Sales Service, P. O. Box 187, Rutherford, N. J., to make available copies of the 1953 edition. This organization makes a business of purchasing and reselling the year-old edition, thousands of which are still in active service.

HANDLING — IEN S-13

Just in case you have not seen the news, or interpreted it in terms of your own materials handling problems, we want to suggest that you keep close watch on the new plastic material handling boxes, trays, pallets, that are coming on the market from a number of directions. Particularly they are useful when work requires protective nesting. They can take the place of home made wood units to carry complete sets of parts as well as collections of the same piece, each in its own niche. They are much lighter than wood. They will not splinter, absorb grease or oil.

They have excellent structural strength. They stack in a minimum of space, securely and neatly. They are easy to keep clean. We will be happy to name manufacturers who can design and make them, each for specified work. We are particularly interested because we are all for replacing those cumbersome wood makeshifts that are employed for so many handling jobs just because the user did not know about the new facilities available for purchase.

YOUR INQUIRIES — IEN S-14

IEN's new reader service form is apparently just what a good many of you have been waiting for to send your inquiries to the manufacturers. We see many names on the service list that have not been there before, perhaps because there was no previous means to check specific interests as there is now. We hope you will find the resulting service from the manufacturers satisfactory in every way. If any replies you receive do not give you all you asked for, please be certain to let us know so we can help.

If you write maker identify as IEN - 7789

Continuous Duty
D.C. SOLENOIDS

Synchro-Start MODEL SD SOLENOIDS have an exceptional amount of power over a long stroke. The sealed casing protects these solenoids from seepage of dust and liquids. They are available with standard terminal studs (Model SD) or with the aircraft type AN Connector (Model SD-A).

Specifications—SD Solenoids can be furnished in all standard voltages up to 115 Volts D. C.

10 lb. pull over 1½ inch stroke.

Power consumption, 550 Watts pulling and 8 Watts holding.

Housing dimensions, 4⅜" x 2½".

SYNCHRO-START PRODUCTS, INC.
8151 N. RIDGEWAY AVE. • SKOKIE, ILLINOIS

Manufacturers of AUTOMATIC ENGINE CONTROLS • SAFETY CONTROLS • OVERSPEED GOVERNORS and CONTROL EQUIPMENT

If you write maker identify as IEN - 7790

Fielden ELECTRONIC TEMPERATURE CONTROL

- *High Sensitivity (± 0.2° F.)*
- *Wide range (—200°C. to +500°C.)*
- *Low first cost, low operating cost*
- *On-Off or 2 Zone Control*

The new Fielden Electronic Temperature Control is a simplified, low cost instrument with high sensitivity—an ideal controller in many industrial fields. This control can be employed for numerous tanks, vats, ovens, kilns, or dryers, in conjunction with electric, steam, or hot water heaters using solenoid, pneumatic, or electric motorized valves. Available in a wide selection of ranges, with either platinum or nickel bulbs. Aside from the many industrial uses, this control has proved very successful in the laboratory for low cost, reliable and accurate control of test chambers, water baths, and similar applications. Write today for complete information.

Robertshaw-Fulton CONTROLS COMPANY

FIELDEN INSTRUMENT DIVISION
2920 N. 4th St., Dept. E, Philadelphia 33, Pa.

If you write maker identify as IEN - 7791

NEW FROM MORSE!

unusually compact
CAM CLUTCH!

- Backstops, indexes, overruns
- Simple
- Easily Installed
- Same OD's as 200-series bearings

Simplicity of design, ease of installation and maintenance make Morse 200-Series Cam Clutches as readily adaptable as bearings to numerous industrial applications. Ground to the same outside diameters as 200-series bearings, they will fit housings bored to accommodate these common bearing sizes.

The Morse 200-Series Cam Clutch combines maximum torque capacity with minimum space requirement. It is a self-contained assembly, furnished without inner races, and can be mounted directly on shafting. Clutches are furnished prelubricated, ready for immediate installation.

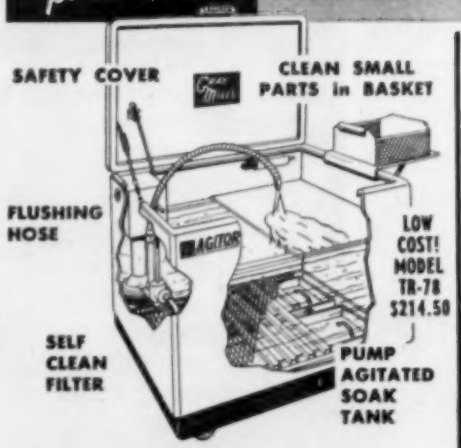
Get more details. Send today for Morse Catalog C 12-54.

Morse Chain Company
7601 Central Avenue
Detroit 10, Michigan

MORSE

If you write maker identify as IEN - 7792

for your parts cleaning problems---
a GRAYMILLS COLD DEGREASER saves time, cleans better, at less cost



THE SAFE, EASY, LOW COST WAY TO REMOVE OIL, CHIPS, GREASE, DIRT and PRESERVATIVES ON JOBS LIKE THIS:

For production, maintenance or service. Use safe, non toxic, low cost solvents. 15 Models. 40 to 300 gallon capcity.

SEND FOR NEW CATALOG

No Installation Headache Portable Too!

USED BY 3854 PLANTS FOR JOBS LIKE THESE:

- Cleaning dies, tools, etc.
- Flushing machined parts
- Flushing "Hydraulic" parts
- Cleaning bearings
- Cleaning Motors and Electrical Equipment
- Maintenance and Service Work
- Removing Rust Preventatives

GRAY-MILLS

GRAYMILLS CORPORATION
3709 NORTH LINCOLN AVENUE • CHICAGO 13, ILLINOIS
WEST COAST 4511 MELROSE AVE. • LOS ANGELES 29

If you write maker identify as IEN - 7793

Dust-Eater

Parker Turbo-Sweep model for Quick, Cleaner Floor Maintenance

Revolutionary new design gives all the benefits of dust-free power sweeping . . . plus the traditional maneuverability, easy maintenance and low cost of Parker's other manual and motorized models.

Dust bag and trash hopper are easily emptied; hand-high controls adjust throttle, clutch, hopper and brush height. Handles dirt, trash, scraps—50,000 sq. ft. per hr. Optional riding sulky.

Ask for a free demonstration.

PARKER
INDUSTRIAL FLOOR SWEEPER
Manual . . . Motorized . . . Dust Control
Parker Sweeper Co., 57 Bechtle Avenue, Springfield, Ohio

If you write maker identify as IEN - 7794

first IN INTERIOR FIRE PROTECTION

ALLENCO

OFFERS

PROMPT DELIVERY
WIDE SELECTION
TOP QUALITY

FIRE EXTINGUISHERS and SUPPLIES

Approvd for fires of Class A, A1, B, B1, C, C1—soda-acid, foam, V/L, pump, gas—several sizes and finishes, also cabinets

*Voted 1st by engineers, architects, contractors, distributors; most widely used. Also complete line of hose fittings for all purposes. Write for catalog or consulting service.

Established 1887
W. D. ALLEN Manufacturing Co.
CHICAGO 6 • NEW YORK 7

If you write maker identify as IEN - 7796

BEARING . . Roller design for application as a roller follower

Source: ROLLER BEARING COMPANY OF AMERICA
Box 480, Dept. IEN, Trenton 3, N. J.

Bulletin SF-80

A steel outer race with integral end flanges, a set of rollers, a one-piece tubular steel cage and an optional inner race make up this new Pitchlign roller bearing roller follower. It is similar in design to the bearing, previously described IEN-7865-52. The point of newness lies primarily in its "follower" application. The trade name is based on the fact that the cage makes contact with the rollers at their pitch line, to eliminate the possibility of skewing, without creating tendency to lift the rollers.

The cage is guided by the outer race flanges within which it rides. The inner shoulders of these flanges hold the rollers laterally so no end thrust is transmitted to the cage. Retaining lips are formed in the cage slots so the rollers will not drop out when the bearing is removed from a shaft or from its inner race.

Sizes range from 0.5000 to 2.2500 in. in shaft diameter in the assembly that omits the inner race. Outside bearing dimensions are 1.000 to 4.00 in. in this design. Inside diameter, when an inner race is employer, is 0.5000 to 1.7500 inches. Corresponding outside bearing diameter is 1.500 to 4.000 inches.

Load capacity without the inner race is 825 to 5,640 lb. at 100 rpm. The capacity ranges from 1,810 to 5,640 lb at 100 rpm. when the inner race is employed. Width, in line with the bore, is 0.500 to 1.250 in. without the inner race. It is 0.750 to 1.250 in. when the inner race is used.

If you write maker identify as IEN - 7797

TESTING . . Bridge type meter reads resistance, 0.04 to 50,000 ohms

Source: HERMAN H. STICHT & CO.
27 Park Place, Dept. IEN, New York 7, N. Y.

Bulletin 630

A resistance, to be measured with this new Type-ZK instrument, is connected across the binding posts at the rear and a knob is turned to shift a variable slide wire resister to bring the instrument's galvanometer to zero position. The resistance value is read directly on a scale.

The meter represents further development of the Type-Z instrument, previously described IEN-7568-52, in which six ranges were selected by positioning a plug. The new assembly employs notched masking disc covers and scales and an arrangement by which the ranges come into action, each with its own scale, as the knob is turned.

Current source is a 4.5-volt dry cell that mounts in a battery compartment in the 3¼ by 4⅜ by 7½-in. housing.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7798

CHAINVEYOR

NEW LOW COST OVERHEAD CONVEYOR *of Revolutionary Design for loads up to 60 lbs. per foot.*

Typical Industrial Installation—illustrates flexibility and simplicity of installation. System is 190 feet long with equivalent of 52 vertical and horizontal 45-degree curves. Total weight carried, 5800 lbs. Driven by ½ HP motor at speed of 10 to 30 F.P.M.

We can't adequately describe the advantages of CHAINVEYOR in limited space. Completely enclosed — Simplicity of design — Reduced bulk, weight —15" radius curves — Full ball bearing chain — Curves, chain scientifically heat-treated to "file hardness" triples life— Simple rugged power drive — So easily installed that most buyers do it themselves for a total cost that is most interesting.

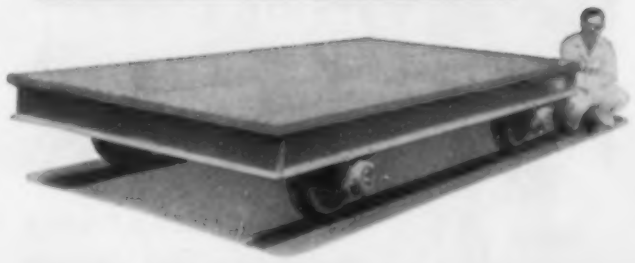
Nationally Distributed by
MATHEWS CONVEYER COMPANY
Ellwood City, Pa.
with offices in all principal cities.

New catalog gives complete information
Write for it!

United States Spring & Bumper Co.
4951 Alcoa, Box 3475 Terminal Annex
Los Angeles 58, California

If you write maker identify as IEN - 7799

EASTON®



PLATFORM CARS

SINGLE AND DOUBLE-TRUCK TO ANY DESIRED CAPACITY

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

A-1044

If you write maker identify as IEN - 7800

FLOW STOPPAGE COSTS MONEY!

Have you ever figured how much flow stoppage costs you in:

- **LOST STORAGE CAPACITY?**
- **LOST MAN-HOURS?**
- **LOST PRODUCTION TIME?**

PneuBin will solve your flow stoppage problems and help reduce your operating expense. When materials hang-up in your bins and hoppers, PneuBin starts them flowing again. The PneuBin unit consists of a steel-backed neoprene panel, mounted on the inside wall of your bin. By the pneumatic inflation and deflation of the panel, the bin contents are displaced and disturbed to activation. After the diaphragm has collapsed, the air control unit (operating off the regular plant air supply) starts another cycle of inflation and deflation. The process continues automatically at whatever frequency is set on the air controller.

Because the neoprene panel is resistant to oils and most chemicals and is also thick and tough enough to withstand severe abrasive service, PneuBin is applicable to most any bin flow problem.

Send for "Flow Stoppage Report" and free literature. PneuBin engineers will gladly make recommendations, with no obligations on your part.

PneuBin is a product of
GEROTOR MAY CORP. • BALTIMORE 3, MD.

Manufacturers of **GEROTOR**
HYDRAULIC PUMPS & MOTORS

If you write maker identify as IEN - 7801

production flows smoothly...

at top speed, at all times, yet free of rejects

Kester makes 62 different fluxes to meet any requirements. Why not write our Technical Department for full information?

KESTER SOLDERING FLUX

KESTER SOLDER COMPANY
4211 Wrightwood Ave., Chicago 39
Newark 5, N. J. • Brantford, Canada

KESTER SOLDER

If you write maker identify as IEN - 7802

Alemite Loader Pumps *refill hand guns in seconds!*

save 3¾ man hours for every 100 pounds of lubricant!

Now—grease guns are loaded quickly, efficiently. Say "goodbye" to wasteful, messy time-consuming hand and paddle loading. Alemite Loader Pumps fill guns fast! Lubricant is protected at all times from "barrel to bearing"—free of grit, dirt, abrasives. No more air pockets, gun is filled all the way. **Models available to handle all lubricants, in sizes to fit 25 pound pails to 400 pound drums.**

Write for free catalog TODAY!

ALEMITE

Dept. K-74, 1850 Diversey Parkway, Chicago 14, Ill.

If you write maker identify as IEN - 7803

DIRT

never gets by an

ANDERSON STRAINER

Use them to protect
- pumps
- air tools
- reducing valves
- temperature regulators
- steam traps

FREE Valuable tips on protecting pipeline equipment with strainers. Write for a copy of Bulletin 252 today.

The V. D. ANDERSON Company
1931 West 96th Street • Cleveland 2, Ohio

SUPER-SILVERTOP STEAM TRAPS • BI-EF PURIFIERS • ANDERSON STRAINERS • SILVERTOP AIR RELEASE VALVES

If you write maker identify as IEN - 7804

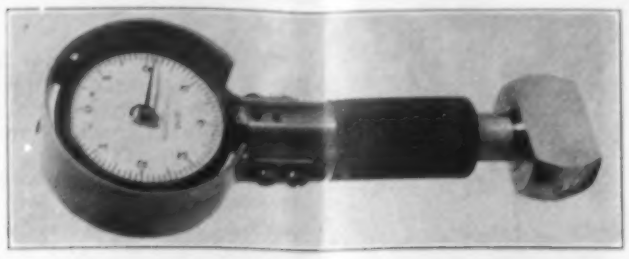
If you grind, smooth or polish metal, wood, leather, rubber or plastic products, investigate the finer finishing qualities of Jewel Brand Velvet Joint Abrasive Belts. For once you've tried them, you'll find that sharper, tougher Jewel Brand Belts not only cut cleaner, faster and smoother, but actually last longer . . . reduce downtime . . . save time and labor on job after job. Prove this for yourself. Let an experienced Jewel Brand Abrasive Engineer help you select the *right* belt for your finishing operation now. Write for details. Abrasive Products, Inc., 541 Pearl Street, South Braintree 85, Mass.

JEWEL BRAND *coated* **ABRASIVES**

If you write maker identify as IEN - 7805

GAGE . . Dial indicator and head to check ball seat dimensions

Source: BROWN & SHARPE MFG. CO.
235 Promenade St., Dept. IEN, Providence 1, R. I.



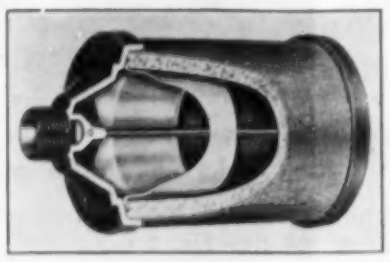
For aircraft engine strut seats

Illustrated is a new special dial indicator gage to check the inside diameter of ball seats to 0.0001 inch. The gaging dimension is transferred to the indicator by an auxiliary plunger that rides in a cone at the back end of the gaging point which is held against the work surface by means of a spring. The auxiliary plunger also is held by a spring against the gaging point. Provision is made for replacement of parts in the event of wear. A guard protects the gage against abuse or damage from mishandling.

If you write maker identify as IEN - 7806

MUFFLER . . Exhaust silencer for pneumatic equipment, pipe to 2 in.

Source: ALLIED WITAN CO.
4315 W. 138th St., Dept., IEN, Cleveland 11, Ohio



No maintenance

New design of the Series-HC muffler, previously described IEN-695-53, employs an aluminum deflector shield to form an acoustic chamber that minimizes direct contact with the high velocity air stream entering the muffler. The shield also acts as a condenser to precipitate moisture. It diverts the air stream to the axis of the silencing chamber in a criss-cross flow pattern permitting the diffused air to penetrate the porous housing body. The muffler applies directly on the exhaust outlet from air-operated equipment. It operates satisfactorily in any position. Sizes range from ⅛ to 2 in. referred to the pipe threaded connection.

If you write maker identify as IEN - 7807

Many manufacturers are now molding and fabricating the inert thermoplastic material Kel-F into parts and products. The plastic manufacturer, M. W. Kellogg Co., 225 Broadway, Dept. IEN, New York 7, N. Y., has prepared a booklet to help you find the makers of specific items. IEN reported this booklet as new literature in IEN-0147-54. It contains the names of converters and processors employing extrusion, forming, machining, and molding by three processes including compression, injection and transfer. It lists manufactured items and available services. A free copy is available.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7808

ELASTICONE® GUIDE PIN COVERS

CUT DIE COSTS 25%

Low-costing Elasticone Guide Pin Covers reduce die breakage; protect man & machine — closes the gap between pins and bushings.

Just snaps into place—no installation costs. Manufactured in stock sizes.

Write for full information and literature.

CENTRAL

2204 EAST HUNTINGDON ST. PHILA. 25, PA.

CENTRAL SAFETY EQUIPMENT COMPANY

If you write maker identify as IEN - 7809

MEET THE NEW CPA*

*** ALBION'S *NEW* CADMIUM PLATED ABRADED CASTERS**

Now . . . a *new look* for industrial casters, Albion's Cadmium Plated and surface-abraded casters offer a life-long, rust proof finish that *never* requires painting.

Top plates, yokes and thrust buttons have smooth, satin-like silver finish as tough as the metal itself. They look clean, stay clean and improve the appearance of your product or equipment.

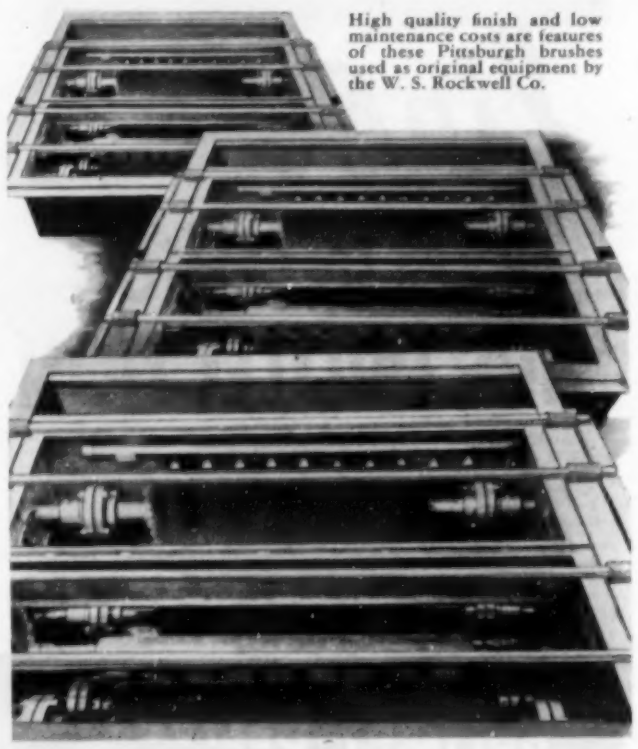
The CPA* finish is available in practically all Albion Industrial Caster series, both rigid and swivel models . . . *at no additional charge!*

So, if you want the finest of industrial casters and appearance as well, be sure to specify Albion's new CPA* finish on your next order.

Represented in Canada: C. J. McDONALD
Rear 1564 Queen St. W., Toronto

ALBION INDUSTRIES, inc.
ALBION, MICHIGAN

If you write maker identify as IEN - 7810



High quality finish and low maintenance costs are features of these Pittsburgh brushes used as original equipment by the W. S. Rockwell Co.

Want to Improve Original Equipment?

Here's the experience of one firm that did, the W. S. Rockwell Company, Fairfield, Conn., producers of a line of cleaning machines used on continuous strip annealing and pickling lines. A special problem existed in connection with these machines since the cold water rinse employed had a corrosive effect on most wire brushes.

Pittsburgh recommended four stainless steel wire brushes . . . operating in a stainless steel tank. The brushes proved to be the answer—providing fast, economical performance while resisting corrosion.

WRITE TODAY for your free copy of our new booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing costs. Address: Pittsburgh Plate Glass Co., *Brush Division*, Dept. W16, 3221 Frederick Ave., Baltimore 29, Md.

PITTSBURGH *Power Driven* **BRUSHES**

BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

If you write maker identify as IEN - 7812

THE 1-2 SPLICE

HOW TO MAKE THE WORLD'S SAFEST, MOST COMPACT CONNECTION

(1) FASTEN WIRES WITH "SCOTCHLOK" (2) INSULATE WITH "SCOTCH" NO. 33

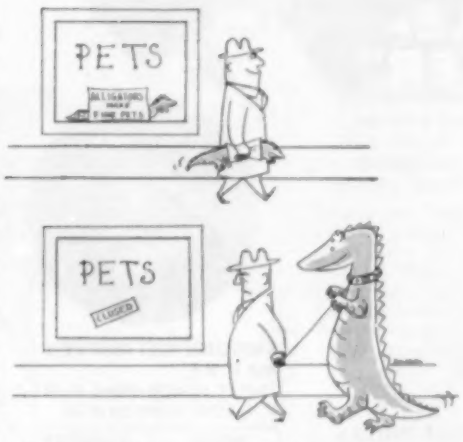
Twist on "Scotchlok"—the toughest, tightest-gripping spring connectors ever made—and snap off winding stem. Compact, never shakes loose. Insulate as shown with "Scotch" Plastic Electrical Tape No. 33. Only .007 inch thick with 10,000 volt dielectric strength. Order today!

The term "Scotch" and the plaid design are registered trademarks for the more than 200 pressure-sensitive adhesive tapes made in U.S.A. by **Minnesota Mining & Mfg. Co., St. Paul 6, Minnesota.**

SCOTCH BRAND Electrical Insulating Products

If you write maker identify as IEN - 7813

things to watch for when buying alligators . . .



But if you're buying special purpose STEELS, may we recommend the **SPEED STEELS**

SPEED CASE a low carbon free machining open hearth steel

SPEED TREAT a medium carbon free machining open hearth steel

SPEED ALLOY a chromium alloy steel

briefly they

- are easy to heat-treat
- are fast machining
- give longer tool life
- produce better finishes

THERE ARE SPEED STEEL SPECIALISTS IN . . .

Akron, Ohio	Burger Iron Co.
Bridgeport, Conn.	Bridgeport Steel Co.
Buffalo, N. Y.	Beals, McCarthy & Rogers
Cambridge (Boston), Mass.	Brown Wales Co.
Chicago, Ill.	W. J. Holliday & Co., Inc.
Dallas, Tex.	Earle M. Jorgensen Co.
Detroit, Mich.	Peninsular Steel Co.
Hammond, Ind.	W. J. Holliday & Co., Inc.
Houston, Tex.	Earle M. Jorgensen Co.
Indianapolis, Ind.	W. J. Holliday & Co., Inc.
Lewistown, Me.	Brown Wales Co.
Los Angeles, Calif.	Earle M. Jorgensen Co.
Memphis, Tenn.	Pidgeon-Thomas Iron Co.
Newark (New York), N.J.	Grammer, Dempsey & Hudson, Inc.
Oakland (San Francisco), Calif.	Earle M. Jorgensen Co.
Philadelphia, Pa.	Horace T. Potts Co.
Toronto, Ontario	Peckover's, Ltd.
Tulsa, Okla.	Earle M. Jorgensen Co.

W. J. Holliday & Co., Inc.

141 141st STREET • HAMMOND, INDIANA

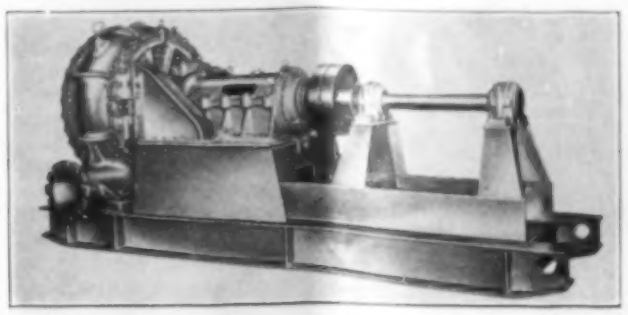
Speed steels are produced by W. J. Holliday & Co., Inc.,

Speed Steel Plate Division

If you write maker identify as IEN - 7815

PUMP . . Centrifugal design for heavy duty dredging operations

Source: MORRIS MACHINE WORKS
Dept. IEN, Baldwinsville, N. Y.



Ask for Bulletin 184

The impeller of this new Type GA and Type GAF dredge pump mounts on an Acme thread on a shaft that is sufficiently large to absorb unbalance, vibration and shock loading in normal operation. The shaft rides on anti-friction bearings for radial and thrust loads or on Kingsbury bearings where the anti-friction design is not suitable. Impeller diameter ranges from 23½ to 76 in. in the range of pump sizes in the line.

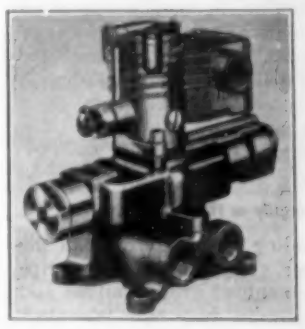
Both sides of the impeller are equipped with external cleaning vanes. An enlarged suction shroud maintains pressure balance. Sealing clearance, at the nose, is adjusted by moving the bearing housing and rotating element axially. The volute type casing is fitted with disc openings of the same size to permit right or left hand assembly. The discs are covered with heavy renewable liners.

The liquid end is tied to the bearing assembly by the casing feet and is rigidly braced against vibration and relative movement by ring angle knee brackets. The stuffing box is designed for connection to an outside source for a small quantity of clean water.

If you write maker identify as IEN - 7816

VALVE . . Solenoid pilot operated, 2, 3, 4 way, 35 to 200 pounds pressure

Source: VALVAIR CORPORATION
949 Beardsley Ave., Dept. IEN, Akron 11, Ohio



Bulletin SKJ-54

Illustrated is new design of the company's Speed King solenoid pilot operated control valve for compressed air or hydraulic fluid, previously described IEN-10068-53. All operating parts are enclosed in the new assembly. The junction box for electrical control connections is cast integral with the housing of the pilot control unit. The pilot can be mounted in two directions over the base and is universal on all of the assemblies in the line. Parts are made of non-corrosive materials. The base is cast bronze and the pilot valve is a zinc base alloy casting. The stem in the base and the plunger in the solenoid are the only moving parts.

Foot or sub-base mounting is optional on all sizes and models except the 4-way 5-port two-pressure valve. Electrical characteristics are subject to specification. Sizes range from ¼ to 1-in. threaded port connections.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7817

A PAID NEWS ADVERTISEMENT BY PREMIER CO.

NEW ALL-PURPOSE FLOOR MACHINE FOR HEAVY-DUTY INDUSTRIAL USE

Premier Company, a famous name in industrial vacuum cleaners, introduces a new line of floor machines with the Premier All-Purpose Floor Machine designed for heavy-duty industrial use. Premier All-Purpose units, thoroughly scrub, wax, polish, shampoo, buff, dry clean, grind and sand all types of floors.

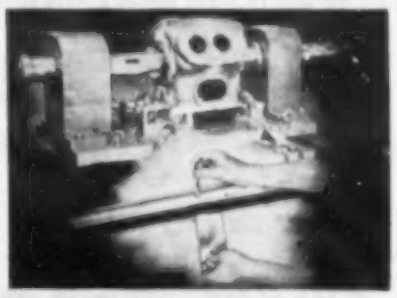
Featuring built-in balance, the new Premier units are easy to operate, will not skip or jump. Low in cost, Premier Machines feature the newest improvements in the market to save money on the first day of use. Are designed to clean floors thoroughly and quickly to give custodians more time for other important duties.

Low unit height of 12" and adjustable handle permit cleaning of hard-to-reach areas. G-E heavy-duty motor and newest ball-bearing silent gear train practically eliminate maintenance. Available in three sizes 13", 15", 18". Necessary attachments included. Complete information given on request without obligation. Write to Premier Company, Dept. 404, 755 Woodlawn Avenue, St. Paul 1, Minn.

If you write maker identify as IEN - 7818

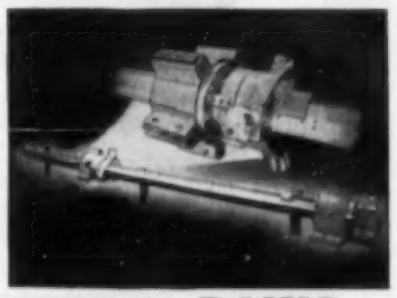
ROUTINE BORING. If there's a better way to do it, DAVIS will know it!

Davis Block-Type Cutter, mounted in a Davis line bar, simplifies ordinary float boring and reaming. Insertion or removal of pin permits cutter to be inserted or removed from bar. Without changing bar or setup, cutters can be changed.



EXTRAORDINARY BORING. If DAVIS can't bore it, it can't be done!

Special Davis three-cutter traveling boring head and blocks bore, face, chamfer. Cutter is actuated by a traverse screw. Facing is done after head is removed from bar. Tool is mounted on a lathe and feed rates can be varied by changing gears.



What's your boring problem?

Davis makes a complete line of interchangeable block-type cutters, boring heads, boring bars, super-micrometer fly-cutter tools, L-type micrometer boring tools, special boring tools and accessories. Ask for Catalog 304.

DAVIS
Boring Tool Division
of Giddings & Lewis Machine Tool Co.
Fond du Lac Wisconsin

If you write maker identify as IEN - 7819

Economical Choice FOR REGULATING STEAM PRESSURES

MASONEILAN

500 Series

Economical choice for regulating pump pressures or reducing saturated steam pressures for heating systems and process work. Accurate—easily adjusted . . . responds instantly to variations. Simple, sturdy construction gives unusually long life, requires little maintenance.

Single or double seated types. Initial pressures up to 250 psi; controlled pressures between ¾ and 160 psi.

NO. 515

Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN
REGULATOR CO.
1188 ADAMS ST., BOSTON 24, MASS., U. S. A.

If you write maker identify as IEN - 7820

"Saved Cost of New Warehouse" says PALTIER USER

Paltier

STORAGE SYSTEM

increases storage space up to **75%** and more — decreases man handling as much as **75%**

ASK US: PALTIER studies your storage problem. —engineers and designs a system for your specific needs.

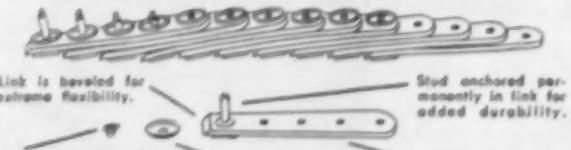
Many PALTIER installations pay for themselves "right from the start."

This booklet tells the PALTIER story, ask for it today.

THE PALTIER CORP.
1711 Kentucky St., Michigan City, Ind.

If you write maker identify as IEN - 7821

This detailed line drawing of the new, patented Veelos TD and TE v-belt makes it easy to see how this new v-belt is designed to do a better job . . . easier!



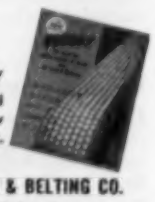
New VEELOS

TD and TE Adjustable V-belt for D and E Drives

It installs in minutes. Links are quickly joined by easy-to-use cup-washers and T-screws to make up individual belts.

It lasts for years. New high-tensile strength link combined with new stud, cup-washer, and T-screw gives added durability.

VEELOS IS KNOWN AS VEELINK OUTSIDE THE UNITED STATES.



Get the complete story of this new v-belt for D and E drives. Send now for new 8-page illustrated catalog.

VEELOS THE LINK V-BELT

MANHEIM MANUFACTURING & BELTING CO.
651 Maubel St., Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 7822

NO COMPETITOR DARES COPY

Your Name Plate

Make it WORTHY Of Your Product

As the maker's "signature," your name plate is one thing that can set your product apart from all others. Make it *distinctive*, and let it reflect the quality you offer.

Let us help you create such a "signature." Our skilled craftsmen, long experience and modern equipment insure finest results. Send a rough sketch or blueprint for design suggestion and quotation.

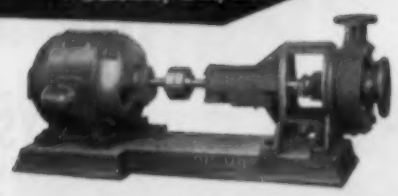
Write now for "Etched or Lithographed Metal Products," with full color examples of name and instruction plates.

CHICAGO THRIFT-ETCHING CORPORATION
1555 N. SHEFFIELD AVE., CHICAGO 22, ILL., DEPT. F
SUBSIDIARY OF DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

If you write maker identify as IEN - 7823

WARREN-QUIMBY for Pumping

• Water • Brines • Organic Liquids
• Condensate • Caustics • Hydrocarbons
• Solvents • Acids
• Gasoline, Oils, etc.



Check These Design Advantages

- Extra heavy shaft insures minimum deflection.
- Split packing gland with swing bolts permits easy replacement of packing.
- Clear-view bracket allows easy access to stuffing box.
- Modified Francis type impeller for high efficiency and low suction loss.
- Renewable case wearing rings at both sides of impeller.
- Extra deep stuffing box; minimum of seven packing rings.
- Renewable shaft sleeve, keyed to shaft.
- Support footing arranged at center of load.
- Heavy duty, double row bearing.

Combined Features Result in Long Life and Low Maintenance

Send for Bulletin 214

IEN 11

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC., WARREN, MASSACHUSETTS

If you write maker identify as IEN - 7824

TESTING . . Environment chamber cycles minus 100 to plus 200 deg. F.

Source: WEBBER MFG. COMPANY
2740 Madison Ave., Dept. IEN, Indianapolis 3, Ind.

Specifications on request

New door design, mounting a removable panel containing forty ¼-in. openings for test lead connections, features the construction of this new Model W-9-100FH environment chamber. The panel can be replaced with similar panels in any desired arrangement of openings so electrical terminals can be installed and located as required. The new unit is particularly intended to test electrical components.

The company's refrigerating equipment is mounted in the housing to bring temperature down to points below ambient. Calrod electric heating elements raise the temperature. The work chamber measures 10 by 32 by 26 inches. The housing is made of stainless steel with 5½ in. of glass fiber insulation. The chamber is lined with copper.

If you write maker identify as IEN - 7825

METAL TREATING . . Liquid forms phosphate paint base on steel

Source: OAKITE PRODUCTS INC.
116-A Rector St., Dept. IEN, New York 6, N. Y.

Technical data upon request

CrysCoat SW is a new liquid for solution in water and application in a pressure spray washing machine to produce a fine grain dense uniform zinc phosphate coating on an iron or steel surface. This coating makes an excellent base for subsequent painting. It meets United States Government Specification JAN-C-490, Grade I, 57-0-2C, Type 2, Class C and PA-PD-191, Rev. 1. The new material produces a lighter coating than the CrysCoat HC material, previously described IEN-5352-53, which is primarily for use in immersion tanks.

One minute application in the phosphating stage, of a 5-stage pressure spray washing machine, is usually sufficient to obtain the required coating weight. The coating develops rapidly, particularly in deep cavities. The solution is buffered for long life and is inhibited so it will not attack equipment surfaces. Upkeep is limited to addition of new material from time to time to maintain solution strength.

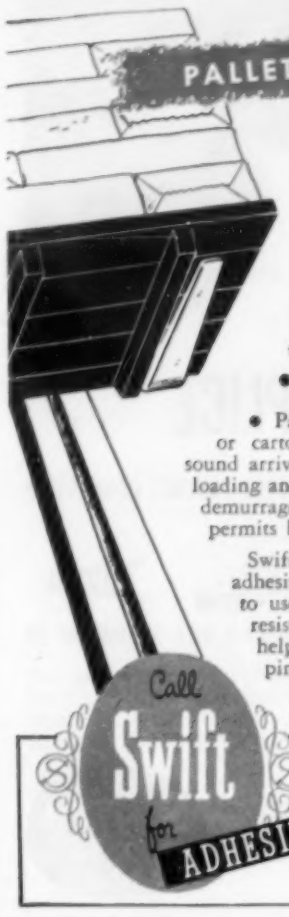
If you write maker identify as IEN - 7826

Silver rivets, in one kit, and welding contact buttons in the other, are packaged with strips of combined bronze, silver and copper in two new "development kits" by General Plate Division, Dept. IEN, Attleboro, Mass. The kits help in working out designs by making the standard stock buttons and rivets available. List price is $25 for both. Dimensioned working drawings on vellum are included in the kits to trace.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7827

If you write maker identify as IEN - 7828



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SWIFT'S PALLETITE ADHESIVES

- RESISTS HORIZONTAL SHIFTING
- POPS CLEAN ON VERTICAL PULL
- ONE GALLON DOES A CARLOAD!

• Palletizing or unit loading of bags or cartons is good insurance for safe, sound arrival of your merchandise. It speeds loading and unloading, reduces handling and demurrage costs — facilitates inventory and permits better use of warehouse space.

Swift has a versatile team of Palletizing adhesives that are ready, and economical, to use. *All* are non-skid and moisture resistant; one of them probably can help you save *real* money in your shipping department.

Write for information, today!

Call Swift for ADHESIVES

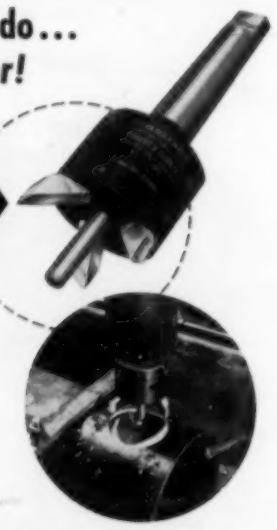
SWIFT & COMPANY
ADHESIVES
PRODUCTS DEPT.
4115 PACKERS AVE.
CHICAGO 9

Another of Swift's Products for Industry

If you write maker identify as IEN - 7829

Does jobs no drill can do... Does many jobs *better!*

Clark "HOLE-MAKER"



Produces round, true holes in CASTINGS, FORGINGS, BOILER PLATE, THIN SHEET STOCK, PIPE, TUBING, ETC.; Drills CROWNED, CYLINDRICAL, FLAT OR WEBBED SURFACES!

No triangular shaped holes, no grabbing on break-throughs, no "walking" on starts with the Clark "HOLE-MAKER"! Produces full-gauge holes from start to finish. Removable pilot guides HOLE-MAKER straight and true even on intermittent cuts. Will also use pilot drill.

Ideal production tool on TURRET LATHES, CHUCKING MACHINES, RADIAL DRILLS, DRILL PRESSES, PORTABLE ELECTRIC and PNEUMATIC DRILLS. Excellent for rough boring, finishing and trepanning. Cuts all ferrous and non-ferrous metals and other materials. Saves money, replaces large drill inventory . . . Bores castings, forgings, etc. 3 to 10 times faster than single pointing!

5 ADJUSTABLE SIZES COVER I.D.'s from 1" to 6"

Specify straight shank or MT 2, 3, 4. Other tapers on order.

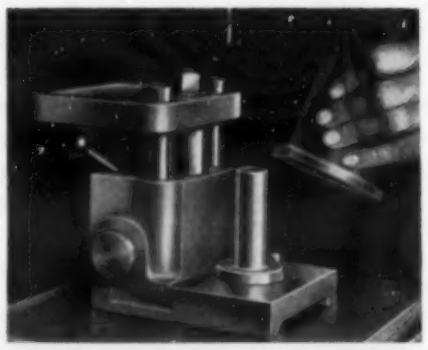
MODEL	CAPACITY
102	1"–2"
203	2"–3"
304	3"–4"
405	4"–5"
506	5"–6"

When ordering, specify material to be cut.

ROBERT H. CLARK COMPANY
9330 Santa Monica Blvd., Beverly Hills, Calif.

If you write maker identify as IEN - 7830

AN AMAZING PRODUCTION TIME SAVER!



The A • B • C LIFT SWING DRILL JIG VISE has patented "Swing Away" top plate which can be moved completely out of the way, giving faster loading, easier nesting, ready inspection of the work • Placed over the work in locking position, the top plate is aligned in the same way as a precision Die Set. Elevating mechanism does *elevating alone. Alignment* is by two hardened and ground bushings which slide over precision ground, rigidly set guide pins • *Locking mechanism* is positive and simple. All key operating parts are of hardened and ground tool steel. Taper wedge action gives positive locking at four locations • *You can drill in two planes*—Fixture can be laid on its back 90° from plane of original drilling • "Swing Away" feature can be used also with *double* top plate, which can be swung a full 180°, making it possible to drill *two holes, side by side,* with minimum wall thickness between • The double top plate makes it possible also to drill larger or smaller holes without removing the piece from the fixture. You simply drill, lift, swing the plate, lock and drill again • *We will gladly arrange demonstration in your own plant*

ACCURATE BUSHING COMPANY
443 North Avenue • Garwood, New Jersey

Engineering Office and Regional Warehouse
5722 W. Chicago Avenue, Chicago 51, Ill.

Representatives in all important industrial centers
Write for literature and name of your local distributor

If you write maker identify as IEN - 7831

MODERNIZE WITH TRIPLETT METERS

A SIZE, TYPE, AND STYLE FOR EVERY INSTALLATION

Your instrumentation is strictly modern in design and construction with Triplett Meters. You can have sizes 2" to 7" in a wide variety of case shapes and mounting arrangements, A.C., D.C., R.F., Rectifier or Dynamometer. Molded and metal cases, rear illumination, and other special features are available. For precision and economy virtually every meter part is made in Triplett plants under rigid humidity and dust control. Every meter represents the refinements gained in half a century of meter experience. Keep *your* panels up-to-the-minute with Triplett Meters—famous the world over for quality, accuracy, and dependability.

Triplett Electrical Instrument Co.
Bluffton, Ohio, U.S.A.

TRIPLETT

If you write maker identify as IEN - 7832

Say Yes...

to this famous "no" valve!

For better results, use the versatile

GRINNELL-SAUNDERS DIAPHRAGM VALVE

Piping in today's complex industrial plants is an exacting science involving the handling of highly corrosive fluids, gases, compressed air, beverages, foods and suspended solids . . . in lines where corrosion, abrasion, contamination, clogging, leakage and maintenance are costly factors. Under such conditions, the amazing performance of the Grinnell-Saunders Diaphragm Valve explains its acceptance by industry after industry.

The basic design of the valve is one big advantage. Working parts are completely isolated from the fluid stream which, in the case of corrosive acids, means longer valve life. Then, there is the matter of economy. With Grinnell-Saunders Diaphragm Valves, it is usually possible to go to less expensive body materials, to which special body linings can be added. Replacement and maintenance expenses, moreover, are greatly reduced. No wonder industry after industry is "Saying Yes" to Grinnell-Saunders Diaphragm Valves. Write for catalog.

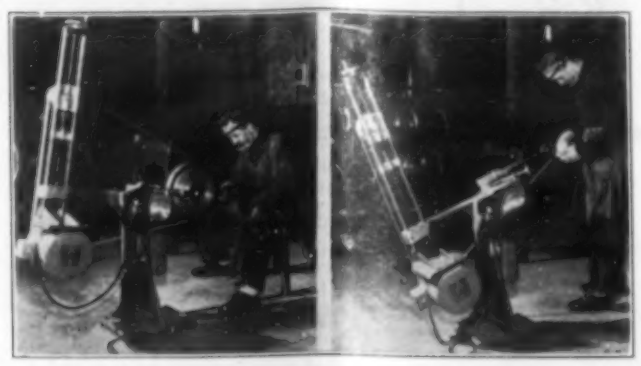
GRINNELL
WHENEVER PIPING IS INVOLVED

Grinnell Company, Inc., Executive Offices, Providence, R. I.
Sales Offices and Warehouses in Principal Cities

If you write maker identify as IEN - 7834

GRINDING . . Abrasive belt machine employs resilient face contact wheels

Source: STEPHEN BADER & COMPANY
253 Langdon Blvd., Dept. IEN, Rockville Centre, N. Y.



Clear on top, bottom and sides

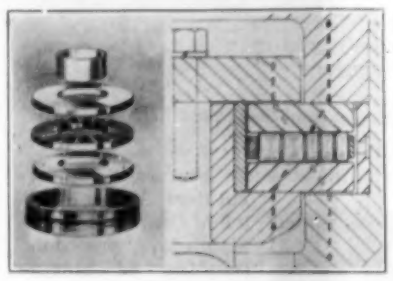
Illustrated is new design of the Space Saver abrasive belt grinding and polishing machine, previously described IEN-10571-50. The new machine employs a 2-hp. General Electric motor for operation at 3,600 rpm. on 3-phase 220 or 440-volt ac. Contact wheel diameter ranges from 2 to 18 inches. Belt width is ¼ to 3 inches. Standard belt length is 132 inches.

The motor is mounted at a point equivalent to the back stand in the normal design of abrasive belt machine. It holds the belt tight as it leaves the contact wheel and prevents tendency to pile up at the work point. The pivoted support on the floor stand permits changing elevation of the working area. A spring mechanism maintains correct belt tension. The machine stands 5 ft. in height. Its base is 16 by 16 inches.

If you write maker identify as IEN - 7835

BEARING . . Roller thrust design for duty involving reversing loads

Source: ROLLWAY BEARING CO.
Seymour St., Dept. IEN, Syracuse 4, N. Y.



Note load arrows

Cast iron is now employed in the inner spacer sleeve, of the Type SDT thrust roller bearing, in place of the previous bronze lined steel sleeve. The new design eliminates the possibility of the bronze loosening while in service. Also the cast iron wears well and machines easily. The bearing is made up, in addition to the inner sleeve, of two thrust plates, the roller equipped plate and the outer sleeve.

The sleeves act together, when the bearing is assembled, to maintain correct clearance when the housing parts are clamped in place. One of the thrust plates rotates while the other is stationary for drive in one direction. The stationary and moving plates reverse when the load is reversed, as shown by the arrows.

Sizes range from 1 to 11 in. in inner sleeve bore and from 3¾ to 25½ in. in outside diameter of the outer sleeve. Rated load capacity is 10,750 to 1,170,000 lb. at 10 rpm.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7836

Tourek

Revere GETS HIGH PRECISION FOR NEW LENS MOUNT!

Extreme accuracy is the priceless ingredient that makes a fine Screw Machine Part *finer!* That's why Revere Camera Co. "Turns to TOUREK" for their new 444 Slide Projector Lens Mount. Quality-minded manufacturers from coast to coast invariably discover a *dependability* about TOUREK Screw Machine Parts that deeply cuts production costs. Call us during the drawing board stage. Or send drawings, samples and specifications today.

SEND FOR *free Technical Folders containing useful Data on TOUREK Ball Joints, Pipe Plugs, and Screw Machine Parts. Use company stationery.*

J. J. TOUREK MFG. CO.
1901 SOUTH KILBOURN AVENUE, CHICAGO 23, ILLINOIS

. . UP TO 2-5/8" DIAMETER SINGLE AND MULTIPLE SPINDLE MACHINES . .
THREADING • TAPPING • MILLING • DRILLING • GRINDING • POLISHING • PLATING • HEAT TREATING • SILVER SOLDERING

WORLD'S LARGEST MANUFACTURER OF BALL JOINTS

If you write maker identify as IEN - 7837

It's never too early for magnetic protection . . .

PRATER PERMANENT MAGNETS

are recommended for installation — **today** — before uncontrolled tramp iron is allowed to play havoc with your equipment.

PRATER PERMANENT MAGNETS, readily attached to hoppers, spouts or chutes, reach deep into the flow to weed out these destructive metals, increase operating efficiency and safeguard life and property. Each installation is specific as to type, size and arrangement of magnets, as specified by your requirements.

Write for details.

- SINGLE GAP
- DOUBLE GAP
- HEAVY DUTY
- HUMP CHUTE

PRATER PULVERIZER COMPANY
1536 S. 55th Court • Chicago 51, Ill.

PRATER

If you write maker identify as IEN - 7838

FOR

New, light-weight, heavy-duty No. 404

MILLERS FALLS GRINDERS

Latest addition to Millers Falls famous line of portable electric grinders, the No. 404 weighs only 9¼ lbs., yet has a 5.5 amp. rating. It uses 4" diameter wheels up to 1" wide and is designed for continuous heavy-duty service. Other models up to 6" with speed ranges from 3700 r.p.m. to 5500 r.p.m.

FASTER

High-speed, high-powered No. 270

MILLERS FALLS POLISHERS

This advanced-design polisher has the extra power (a full 5 amps.) and greater spindle speed (1900 r.p.m.) needed for best results with the latest type cleaners and polishers. Standard equipment includes deep, carpet-pile wool pad, the most effective polishing head ever developed.

FINISHING

MILLERS FALLS SANDERS

MILLERS FALLS TOOLS SINCE 1868

The Mark of Superiority

Light, high-power, 7-inch No. 870

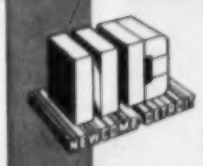
Weighs only 7½ lbs., but with full 5.5 amp. rating. Perfect for the new laminated phenolic grinding wheels and discs as well as for fast sanding. Other models up to 9".

FREE literature on request.
MILLERS FALLS CO.
Dept. IE-2
Greenfield, Mass.

If you write maker identify as IEN - 7839

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



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If you write maker identify as IEN - 7840

JOHNSON BAND SAWS

SPECIFICATIONS — MODEL J

BOTH WET AND DRY MODELS

Capacity—10" rounds, 18" flats.
Motor—½ H.P. Ball Bearing any voltage available, single or polyphase. (¾ H.P. on wet machine).
Wheel Diameters—16".
Floor Space—66" x 31".
Bed—11" wide, 44" long, 6" deep, 24" high.
Overall Height—(Closed)—39".
Blade Length—11'5" x ¾" x .032". All Standard blades of these specifications can be used.
Weight—Approximately 750 lbs. Crated 800 lbs. Boxed for export 875 lbs.
Speeds—35, 90, 130, 190 feet per minute.
Casters—Optional at slight extra cost.

MODEL B, 5" x 10" CAPACITY, ALSO AVAILABLE

WRITE FOR DETAILS

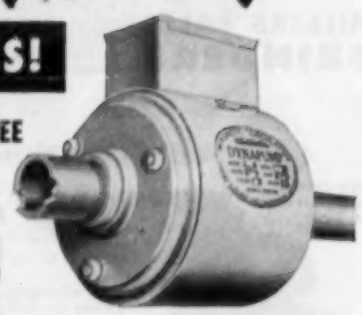
JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 7841

Give your product these

Dynapump

ADVANTAGES!



- MAINTENANCE FREE — No lubrication
- LEAKPROOF — No shaft seal or stuffing box
- EASILY INSTALLED — Compact, light, may be mounted in any position
- CORROSION FREE — Stainless steel
- LOW FIRST COST

Magnetic Fostoria Pumps

Ad No. 5404

The revolutionary DYNAPUMP is a magnetically driven fractional horsepower centrifugal pump that eliminates 90% of pump difficulties. It is suitable for pumping water, solvents, refrigerants, corrosive or hazardous fluids, beverages, etc. Write for descriptive folder.

THE FOSTORIA PRESSED STEEL CORP., Fostoria, Ohio
"Our 38th Year of Quality Products" Dept. 707

If you write maker identify as IEN - 7842

YOU SAVE $$$ WITH

EMBOSSED LABELS

NO DIE CHARGE

FOR PRODUCT IDENTIFICATION

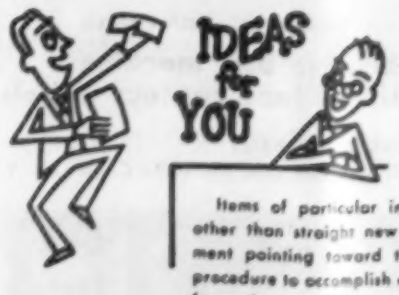
ANY SIZE LABEL
ANY SIZE LETTERS
ANY METAL — INCLUDING STAINLESS STEEL

Raised-letter nameplates to your specifications. Less expensive than comparable etched labels.

Tack-weld, rivet or screw them to your product. Paint or galvanize over them. Wording will remain sharp and clear. Also etched and lithographed labels.

Send Sample or Sketch for Price Quotation
Dept. B

TECH PRODUCTS, INC.
442 Mosel Avenue Staten Island 4, N. Y.



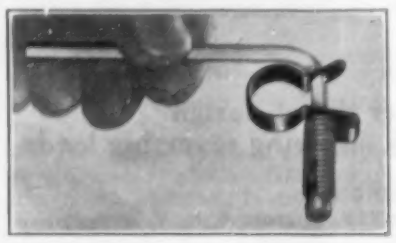
Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for action, each to provide ideas for you.

If you write maker identify as IEN - 7843

A rise in temperature, to 135 deg. F., opens a valve on this new Fire Sentry and releases gas, contained under pressure in the housing, to blow a whistle mounted on the housing. The whistle warns of dangerous temperature such as that which could be caused by a fire. At the same time that the whistle is blown, the unit projects a perfumed odor into the air to warn deaf persons. The unit can be set on a shelf about 18 in. below the ceiling. It stands about 7 in. in overall height and lists at $1. Richard Stuart Mfg. Corp., 1700 Walnut St., Dept. IEN, Philadelphia 3, Pa., is the source.

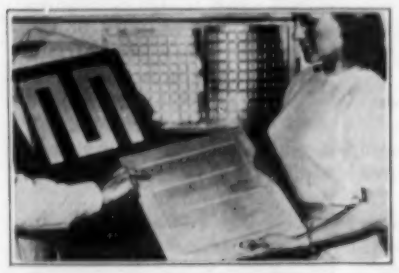
If you write maker identify as IEN - 7844

The hexagon key cannot be lost from the socket head screw, that it is intended to turn, when it is held in place by a new Key Klip. This clip, manufactured by Vlier Engineering Co., 4552 Beverly Blvd., Dept. IEN, Los Angeles 4, Calif., was originally designed to hold the wrenches on the set screws on the company's Screw-Ball Clamps that are employed in jigs and fixtures. Three sizes are ¼, 5/16 and ⅜ inch. They can be used with any type of socket head set screw.



If you write maker identify as IEN - 7845

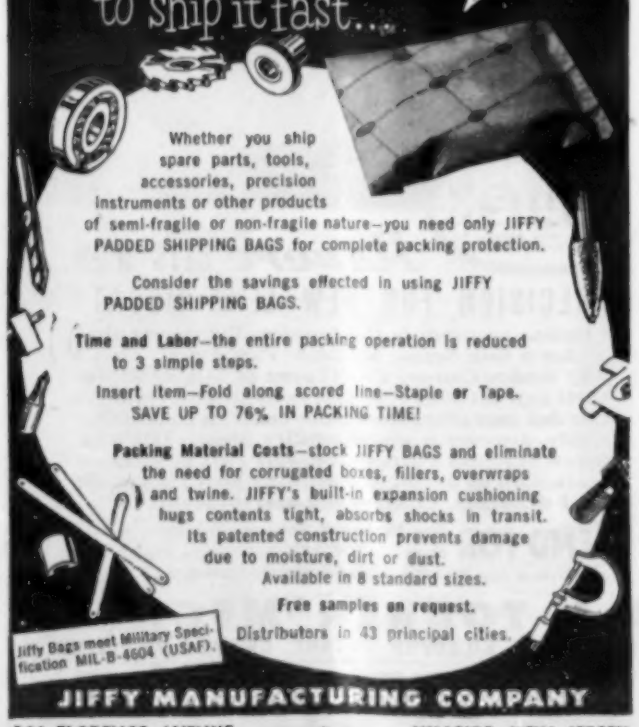
Turco Products, Inc., 6135 So. Central Ave., Dept. IEN, Los Angeles 1, Calif., tells us about a new process it has developed under the trade name Chem-Mill for precision forming of metal parts from aluminum sheet immersion in a chemical solution. The process was originated by North American Aviation and was developed in conjunction with Turco Products. The latter company is licensed to make the process, on which patents are pending, available to other manufacturers. Work emerges from the chemical bath smooth and cut to a depth that depends upon the length of immersion time. Prior to immersion, the work is masked for those areas that are to be protected against the chemical action.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7846

It takes only a Jiffy to pack it right... to ship it fast...



Whether you ship spare parts, tools, accessories, precision instruments or other products of semi-fragile or non-fragile nature—you need only JIFFY PADDED SHIPPING BAGS for complete packing protection.

Consider the savings effected in using JIFFY PADDED SHIPPING BAGS.

Time and Laber—the entire packing operation is reduced to 3 simple steps.

Insert Item—Fold along scored line—Staple or Tape. SAVE UP TO 76% IN PACKING TIME!

Packing Material Costs—stock JIFFY BAGS and eliminate the need for corrugated boxes, fillers, overwraps and twine. JIFFY's built-in expansion cushioning hugs contents tight, absorbs shocks in transit. Its patented construction prevents damage due to moisture, dirt or dust.

Available in 8 standard sizes.

Free samples on request.

Distributors in 43 principal cities.

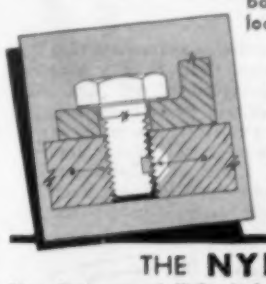
Jiffy Bags meet Military Specification MIL-B-4604 (USAF).

JIFFY MANUFACTURING COMPANY
366 FLORENCE AVENUE • HILLSIDE, NEW JERSEY

If you write maker identify as IEN - 7847

You don't need SAFETY WIRING ... when you use NYLOK ONE-PIECE self-locking bolts and screws . . .

Stop wasting time and money on intricate and complicated safety-wiring!
Use NYLOK self-locking screws and bolts. They lock themselves in any position, seated or unseated . . . no other parts needed. They assure positive, vibration-proof locking without galling, distortion or mutilation of threads or seating surfaces. The resilient nylon insert provides the wedge that locks. It's always there, can't be left out or forgotten and may be safely re-used many times. So cut costly assembly time, eliminate extra safety-wiring labor and materials by using NYLOK self-locking screws and bolts. When you use NYLOK, you don't need drilled-head screws and bolts because NYLOK screws and bolts lock themselves!



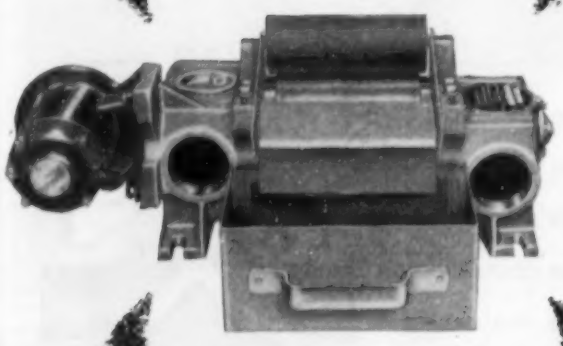
• HOW NYLOK LOCKS •

Resilient nylon plug (A) sets up lateral thrust, smoothly wedging mating threads together (B). All of locking action is on the threads; head is not stressed. Locking is positive, seated or unseated. Provides leak-proof seal where liquids are involved.
For full specifications and details of service approval . . .

THE NYLOK Corporation
Manufacturers of Nylon-locked fasteners covered by U. S. patents and patents pending
Offices in: New York City, Detroit, Chicago, North Hollywood
Main Offices and Factory — Elmira Heights, N. Y.

If you write maker identify as IEN - 7848

new!
Houdaille
MAGNETIC
SEPARATOR



For Automatic, Low-Cost Removal of Ferrous Metallic Particles from Coolants and Cutting Oils
used in
GRINDERS • MILLING MACHINES • GEAR SHAPERS
DRILLING MACHINES • HONING MACHINES
BROACHING MACHINES
and many others

NOW . . . a completely new Magnetic Separator designed to remove ferrous metallic particles and sludge from liquid coolants, mineral oils and soluble oil solutions used in all types of metal finishing operations. Automatic, continuous cleaning of coolants with the Houdaille Magnetic Separator provides:

- Increased Production
- Longer Wheel & Tool Life
- Better Finishes with Fewer Rejects
- Greater Safe-Use Life of Oil or Coolant
- Lower Operating and Maintenance Costs

IMPORTANT FEATURES:

EASY INSTALLATION ON MACHINE TOOL SUMP
Flexible design permits choice of three inlets and two outlets. Small, compact unit requires little or no extra floor space.

360° CONSTANT MAGNETIC ATTRACTION
Permanent ring magnets enclosed in revolving cylinder provide 360° of magnetic attraction. Evenly distributed . . . no spottiness.

ECONOMICAL, TROUBLE-FREE OPERATION
Separator uses 1/70 hp. gear head motor (TENV). Features smooth, automatic operation. Nothing to lubricate, nothing to get out of order.

Write today for Equipment Bulletin giving full details.

HONAN-CRANE CORP.
802 Wabash Ave., Lebanon, Ind.
a subsidiary of
HOUDAILLE-HERSHEY CORP.

If you write maker identify as **IEN - 7850**

SCIENCE MAKES POSSIBLE

FUSED EDGES

U. S. PATS. 2521994 2521995

Vacuum cleaner air filter and a sweat band, both with sealed edges.

Thermoplastic man-made fibres can be felted and fabricated into special parts for assembly or use without further processing. The felt within the edges can have any desired porosity, within wide limits. Thus these fused-edge felts have great versatility, and are capable of rendering many different services. It will pay you to look into what they can do for you. Write for information on your company letterhead.

SOME PRESENT USES

Vacuum cleaner filters
Powdered soap containers
Face powder pads
Insulation
Clothing lining
Fluid filters
(The field has barely been scratched!)

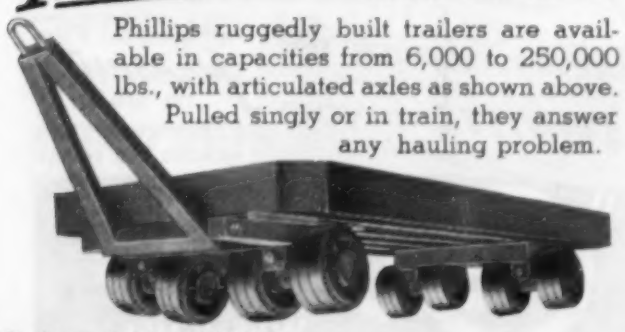
American Felt Company
TRADE MARK

18 GLENVILLE RD. GLENVILLE, CONN.

If you write maker identify as **IEN - 7851**

Phillips *Industrial* TRAILERS

Phillips ruggedly built trailers are available in capacities from 6,000 to 250,000 lbs., with articulated axles as shown above. Pulled singly or in train, they answer any hauling problem.



The heavy-duty Model TFU-800 has a capacity of 80,000 pounds.
Ask for Bulletin E-35A.

A sturdy, well-built trailer for general industrial hauling. Capacity of Model TF-60 is 6,000 lbs.
Ask for Bulletin E-16A.

Phillips

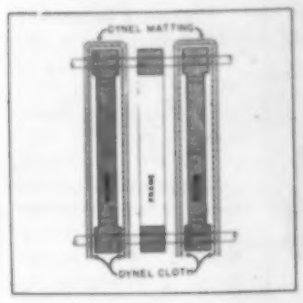
CORPORATION

(formerly Phillips Mine & Mill Supply Co.)
Manufacturers Since 1863
15 Arch Street, Carnegie, Pa.

IDEAS for YOU — *Continued*

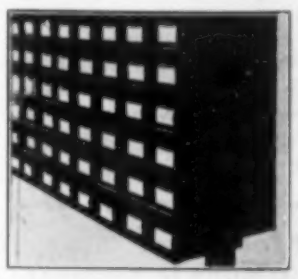
If you write maker identify as **IEN - 7853**

New method to dress filter press plates, to minimize leakage and prevent rim cutting the cloth, employs a Dynel fabric of the required porosity and a Dynel mat. The latter gaskets adjacent frames and cushions the cloth. The method has been applied successfully in wood and metal filter presses. The mat can be sewn like cloth. It is available in 12 to 72-in. widths, along with the Dynel filter cloth, from Carbide and Carbon Chemicals Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y.



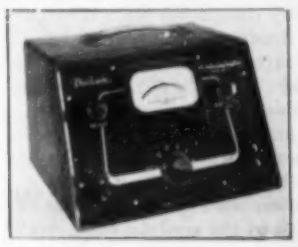
If you write maker identify as **IEN - 7854**

Storing is simplified and tool dispensing is made easy by employing the sliding storage drawers supplied by Stackbin Corporation, 1077 Main St., Dept. IEN, Pawtucket, R. I. Trick is to store all of the tools and the instructions for a given job in one drawer and to issue the "whole works" when that job is called for. The tool set can be checked when it is returned to see that it remains complete or to make the necessary additions.



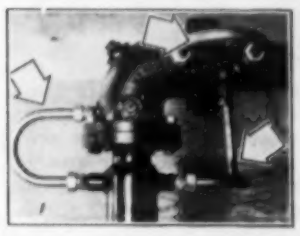
If you write maker identify as **IEN - 7855**

Indicating amplifier, Type 2HLA-3D-C is a new self-contained instrument for amplification and measurement of voltages and currents of minute magnitude. By employing a second harmonic magnetic converter, as the input stage, the instrument eliminates need for mechanical choppers, achieves low drift, wide frequency response and reliable service. Gain, linearity and zero are independent of variations in line voltage and tube characteristics. Doelcam Corporation, 1400 Soldiers Field Road, Dept. IEN, Boston 35, Mass., is the maker.



If you write maker identify as **IEN - 7856**

Preformed tube and fittings are available from Parks-Cramer Co., Box 444, Dept. IEN, Fitchburg, Mass., to connect the jackets in pipe runs and fittings as shown in the illustration. Steel tube is used to handle Dowtherm, hot oil or high pressure steam. Aluminum or copper tube is used for low pressure steam. Tube fittings are supplied to suit the two materials. Each jump-over connection is engineered to suit a given job.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7857**

ROBINSON METERING PUMPS

FORCIBLY EJECT EXACT METERED AMOUNTS OF:

ASPHALT • RESIN • PITCH • ROSIN
ADHESIVES • STEARIC ACID and PLASTER OF PARIS • PORTLAND CEMENT AND VARNISH MIXTURE • SEALING COMPOUND • POLYAMIDE • PLASTISOL PASTES • GLYPTAL MIXTURES • RUBBER BAKELITE

Melt and meter materials that are solid at normal temperatures. Easy ejection through tiny apertures.

Any of 20 discharge quantity settings can be changed in 2 seconds (one model has 50 settings) without tools.

Eject accurately .04cc to 370cc in 2/3 second.

Thermostatic heat from 70° to 500° F . . . Viscosities from #10 S.A.E. oil to 200,000 centipoises.

Unskilled operators quickly learn to do neat, clean work.

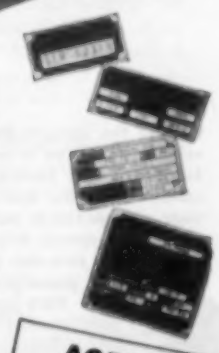
The versatile Robinson Metering Pumps may be the economical solution to one of your production problems. Write for free folder.

EDWARD E. ROBINSON
INCORPORATED
P.O. Box 4
95 PARK AVE. • NUTLEY 10 NEW JERSEY
Telephone NUtley

If you write maker identify as **IEN - 7858**

How To

Mark Name Plates In 1/5 the Time



Cutting costs in these times is a good trick if you can do it. You can, on plates requiring detail marking, by using an Automark Electric Metal-Marking Typewriter. The operator lightly touches the key and the Automark does the rest, quickly and automatically. No dial to turn—no lever to pull. Marking output is increased five times and worker fatigue is greatly reduced. Write today for Bulletin 8-16.

AUTOMARK
Electric Metal-Marking
TYPEWRITER
Manufactured Exclusively By

AGENTS
Desirable territories open for responsible representatives. Write giving complete information, lines carried and territory covered.

DEFIANCE MACHINE & TOOL COMPANY
1926 South Vandeventer Ave. • St. Louis 10, Mo.

If you write maker identify as **IEN - 7859**

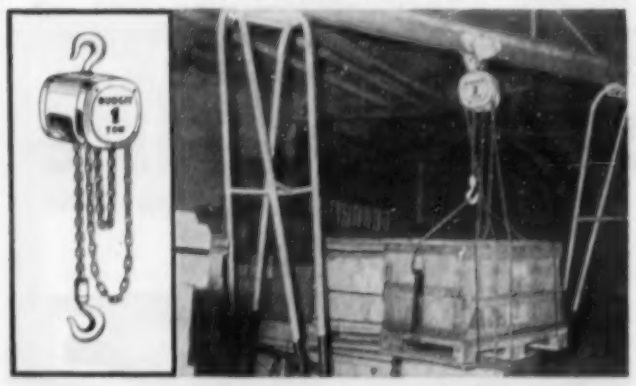
MUELLER BRASS CO. 600 SERIES

BEARING ALLOYS
FORGINGS • ROD • SCREW MACHINE PRODUCTS
proving their quality throughout American industry

Mueller Brass Co. "600" series bearing bronzes are lightweight, high strength copper-zinc base alloys with excellent bearing and mechanical properties, non-galling and non-seizing characteristics and good resistance to corrosion. There are six members of the "600" series . . . one for every purpose. Write today for complete information about the MUELLER BRASS CO. "600" series alloys for forgings, rod or screw machine products.

MUELLER BRASS CO. 119-A
PORT HURON 26, MICHIGAN

If you write maker identify as **IEN - 7860**



PORTABLE ECONOMIZER SAVES ON THE SPOT

The tough, lightweight 'Budgit' Aluminum Chain Block is a one-man hoist. The 1/4-ton size weighs only 29 lbs. It is easy to carry, hang up and use for economical spot-lifting here, there, everywhere. It lifts the full load with a 25-lb. pull on the hand chain. Saves time and effort in emergencies, in maintenance, in construction.

The cost-cutting performance of the 'Budgit' Chain Block is matched by safety-first quality throughout: big, powerful automatic load brake; heat-treated spur gears; load carried in two sets of gear teeth; non-fracturing hooks; load chain no ordinary hacksaw can cut; splined fastenings; rugged aluminum alloy housing. Get full details on all capacities — 1/4, 1/2, 1 and 2 tons — from your nearby "Shaw-Box" Distributor. Or, write us for Bulletin 398.

MAXWELL MMM TRADE MARK

'Budgit' ®
CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.
Muskegon, Michigan

Builders of "Shaw-Box" and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' and 'American Microsen' Industrial Instruments, and Aircraft Products.

If you write maker identify as **IEN - 7861**

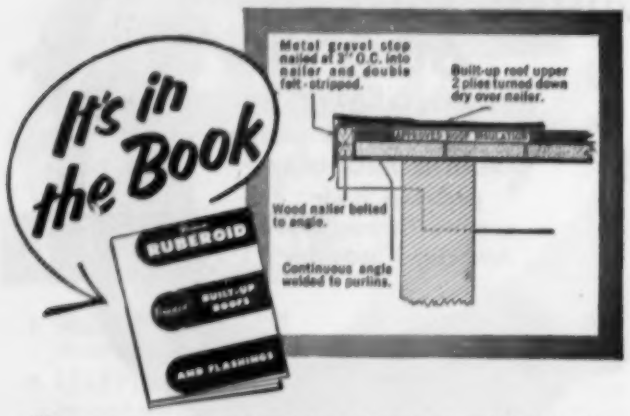
THE SHORTEST DISTANCE TO THE SOLUTION OF YOUR DUST PROBLEM

Here is the straight-line approach to facts on how to determine the solution to your dust problem. Our new manual, "A Simplified Test Method for Dust Control Determination" describes the most direct method for determining the scope of your dust problem and your dust control equipment requirements. Whether yours is a problem of recovering valuable process dust or elimination of dust that is hazardous or a nuisance—you'll profit from the time spent going over this manual.

For your copy, just clip this ad to your company letterhead and sign your name and title.

dustex CORP.
1764 Walden Avenue
Buffalo 25, N. Y.

If you write maker identify as **IEN - 7862**



The answer to all your roofing maintenance problems is in Ruberoid's Built-Up Roofing Specification Book. There's a complete specification with detail drawings, like the one above, to meet every condition—Smooth Surfaced Asbestos, Coal Tar Pitch or Special Bitumen with gravel or slag surfacing, and smooth or gravel-and-slag surfaced asphalt.

Because Ruberoid makes *every type* of built-up roof, Ruberoid roofers are not prejudiced in favor of any one type. Because Ruberoid has been a leader in the field for 60 years, you can depend on the right materials and the right specification through Ruberoid Approved Roofers.

Give your roof a thorough check-up now, *and write for Ruberoid's free Built-Up Roofing Specification Book. The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.*

The RUBEROID Co.

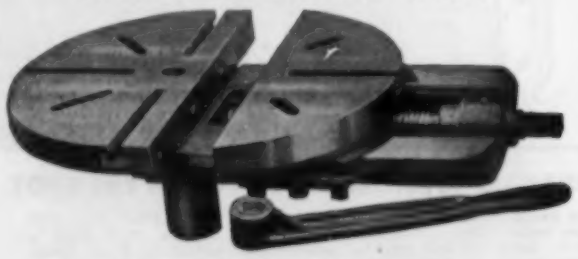
ASPHALT AND ASBESTOS BUILDING MATERIALS

If you write maker identify as **IEN - 7863**

Try the MODERN

SAFETY DRILL TABLE

Under our FREE TRIAL OFFER



For Faster, SAFER Work

in your Maintenance Department

Combines a drill table, a vise, a set of parallels and V block. No more lost ringers from hand held jobs that slip. No more 30 minute set-ups for a 1 minute drilling operation. Made in 6 sizes from 8" to 28" dia. We guarantee each Safety Drill Table will save its cost on labor alone in 6 months, to say nothing of plant down time when vital maintenance is delayed even a few minutes.

Write for Free Folder

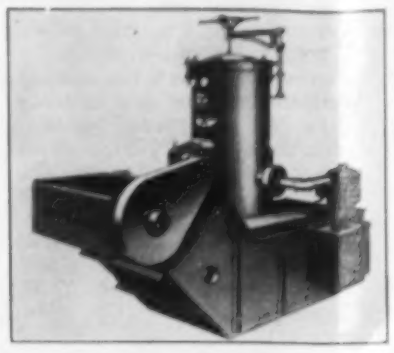
Shows many typical set-ups, and use on radial drills. Complete specification on all models. Covers MONEY BACK GUARANTEE and 30 DAY FREE TRIAL OFFER.

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

If you write maker identify as **IEN - 7864**

FILTERING . . Coolant clarifier for mineral oil, water soluble coolant

Source: U. S. HOFFMAN MACHINERY CORP.
219 Lamson St., Dept. IEN, Syracuse 6, N. Y.



Literature on request

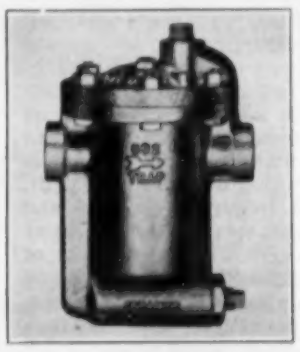
Magna-Flomaster trade names new filtering equipment to clarify mineral cutting oils, or water soluble coolants, employed with finishing grinders and machine tools where ferrous metals are being worked. The equipment is available in three models with flow rates from 20 to 40 gpm. Larger units can be specified. Particles to 5 microns and smaller are removed from the fluid to produce the clarity required for fine grinding. The process is continuous and its progressive stages are all mechanical.

Contaminated oil enters a tank where the heavier solids are allowed to settle to the bottom. Next, the lighter ferrous particles are attracted to a magnetic plate. The oil is then passed through a full-flow cartridge type filter which removes the remaining fine particles. Operation requires no attention, practically no maintenance and eliminates sump cleaning.

If you write maker identify as **IEN - 7865**

TRAP . . Inverted bucket for steam to 250 lb., has a built in strainer

Source: ARMSTRONG MACHINE WORKS
888 Maple St., Dept. IEN, Three Rivers, Mich.



Removable screen

Model 882 is a new trap, identical to the company's previously developed No. 812 with side inlet and outlet, except for the strainer built in at the bottom. This unit employs a stainless steel screen to remove dirt and scale. The trap is recommended for use where these conditions are bad.

Maximum operating pressure is to 250 pounds. Capacity ranges from 1,300 to 2,200 lb. per hour. Connections are ½ and ¾ in. pipe threads. The body is made of cast semi-steel. Internal parts are chromium steel and stainless steel. Overall dimensions are about 8¾ by 5⅝ inches. Weight is 15 pounds. List price is $25.50.

If you write maker identify as **IEN - 7866**

Four sizes, between ⅛ and $\frac{7}{32}$ in., in any length from 2 to 13½ in., covers a line of paper "sticks" being made by Setter Bros. Inc., Dept. IEN, Cattaraugus, N. Y. The sticks are accurate in diameter, straight, and are made of tightly wound white paper. The company wonders what uses there may be for them in the industrial field and in product manufacture. Samples are available.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7867**

A PAID NEWS ADVERTISEMENT BY THE CARBORUNDUM CO.

NEW DEPRESSED CENTER WHEELS

reduce cost of roughing, weld grinding, cutting off and slotting

Fast, safe grinding at low cost on the roughest jobs—that sums up the story of new CARBOFLEX Depressed Center Wheels by CARBORUNDUM. Some typical applications where this strong, reinforced wheel has proved its superiority include: undercutting and reducing heavy welds, roughing off fins and sharp edges, notching and cutting off gates and risers, removing surface defects, and general purpose roughing, slotting and cutting off.

The CARBOFLEX Wheel is an entirely new and effective combination of tough, top-quality abrasive grain and a strong, reinforced bond. The result is a depressed center wheel with extra-high cutting ability plus extremely high strength and resistance to cracking. Tests prove that too much reinforcing material lowers cutting effectiveness—too little is unsafe. CARBOFLEX Depressed Center Wheels achieve the most effective balance ...with enough reinforcement to hold the wheel together at recommended operating speeds even should it inadvertently become cracked...yet without sacrificing cutting ability.

An exclusive feature of the CARBOFLEX Wheel is the knurled back, which permits the operator to cut with both sides and the edge with no initial dressing.

Try CARBOFLEX Depressed Center Wheels on your toughest jobs. Call our Distributor or Salesman, listed in the yellow pages under "Abrasives" or "Grinding Wheels." Or, if you prefer, use the inquiry form provided by this publication—or write Dept. IEN 81-42, **The Carborundum Company,** Niagara Falls, New York.

"Carborundum" and "Carboflex" are registered trademarks of The Carborundum Company, Niagara Falls, New York

If you write maker identify as **IEN - 7868**

of Flow, Liquid Level, Pressure

NEW! SIMPLEX ORTHOFLOW®

TRANSMITTER—Compact new electric unit actuates both in-plant and remote meters ... unaffected by normal variations in voltage, temperature. Simple, dependable, rugged. Accuracy of ±2% for wide ranges.

RECEIVER—Time-proven Simplex H Meter. Precisely duplicates transmitted data . . . automatically resets to correct data after power interruptions. Indicates, records, totalizes. Easy-to-read flow scale and chart.

WRITE FOR BROCHURE

SIMPLEX
VALVE AND METER COMPANY

Simplex Valve & Meter Company, 6717 Upland St., Philadelphia 42, Pa.

If you write maker identify as **IEN - 7869**

New Harvey aluminum alloy 66S will reduce your costs

high-strength-low-cost-ratio

66S saves money by combining the high strength of 24S and the good corrosion resistance, weldability and economy of 61S. This new aluminum alloy cuts material and fabricating costs and reduces product weight. Tooling service charges are nominal and Harvey prepays the freight. Study the cost-saving advantages of Harvey 66S. Write for your Bulletin on 66S.

Made of 61S, extrusion above requires the full cross section. Using 66S saves material in white area, reduces costs 21%.

MAKING THE MOST OF ALUMINUM...FOR EVERYONE

HARVEY Aluminum

HARVEY ALUMINUM SALES, INC.
TORRANCE—LOS ANGELES, CALIFORNIA
BRANCH OFFICES IN PRINCIPAL CITIES

If you write maker identify as **IEN - 7870**

STEVENS WALDEN Inc.
Creators of the Original
SPINTITE WRENCHES
OVER 150 STYLES AND SIZES

Presents THE NEWEST MEMBER OF ITS FAMOUS OLD FAMILY

"GRIP" SPINTITE® WRENCHES THE UNIQUE

for AUTOMOTIVE • TELEVISION • RADIO INSTRUMENTS • ASSEMBLY WORK

SIZES 3/16 TO 1 1/16

ONE HAND OPERATION—
- **GRIPS nuts or bolts of any material**
- **HOLDS firmly in any position**
- **TIGHTENS nut or bolt securely**
- **RELEASES at the pull of the fingers**

MAKERS OF WORLD-FAMOUS HAND TOOLS FOR OVER 50 YEARS

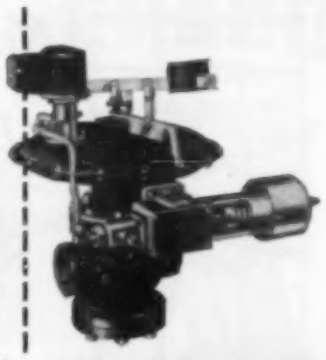
STRONG PLASTIC HANDLE • FINEST QUALITY STEEL SHANK AND SLEEVE • BRIGHT PLATED FINISH
SPECIAL SIZES AND MATERIALS TO ORDER

Write for catalogue

STEVENS WALDEN Inc.
466 SHREWSBURY STREET — WORCESTER, MASSACHUSETTS

If you write maker identify as **IEN - 7871**

for **on-off, high-low, modulating** *and* **gas control** *another industry first*



General Controls B-55G Series slow-opening, electric-diaphragm valves are available in 3 basic models, responding either to temperature, pressure or electric controls. Originated by General Controls and standard for the industry, the flexible B-55G Series valves feature adjustable slow-opening speeds to 60 seconds, fail-safe, on-off and throttling control of all fuel gases flowing to industrial furnaces, ovens or gas-fired boilers.

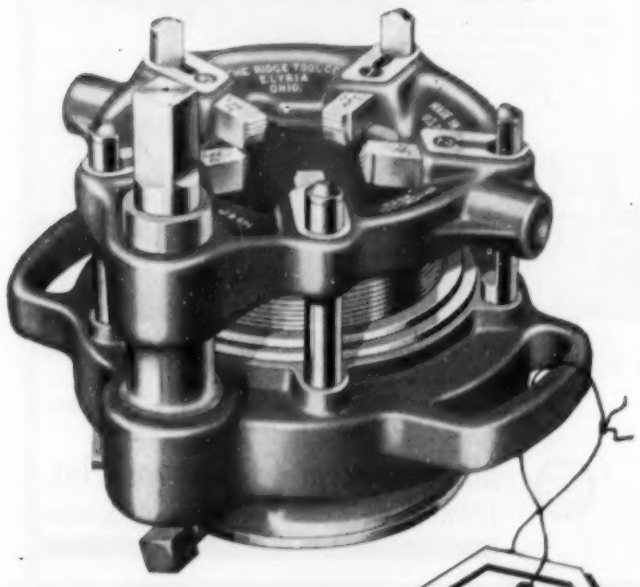
General Controls
B-55
Governor Type
diaphragm valve

GENERAL CONTROLS
Plants in: Glendale, Calif., Burbank, Calif., Skokie, Ill.
Factory Branches in 37 Principal Cities
SEE YOUR CLASSIFIED TELEPHONE DIRECTORY

Manufacturers of Automatic Pressure, Temperature, Level and Flow Controls for Heating, Home Appliances, Refrigeration, Industrial and Aircraft Applications.

If you write maker identify as **IEN - 7872**

For Easy Pipe Threading 2½" to 4"... it's the 4P RIDGID



Every 4P TESTED for Perfect Threads before shipment

RIDGID 4P is easy to carry, easy to put on pipe

Balanced loop handles make it a cinch to carry and swing up on a pipe. Besides, the mistake-proof workholder sets to size before you lift it—only one screw to tighten on pipe. Easy upkeep—drive pinion in oilless bronze bearing; safe enclosed gear. 4 sets of 5 high-speed steel dies, 2½", 3", 3½", 4". Ratchet handle. RIDGID drive shaft available. Save work—buy 4P at your Supply House.

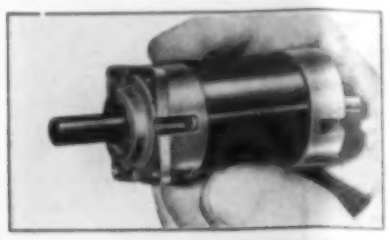
The Ridge Tool Company • Elyria, Ohio, U.S.A.

RIDGID
Work-Saver Pipe Tools

If you write maker identify as **IEN - 7874**

DRIVE . . Planetary speed reducer, miniature design, precision assembly

Source: GLOBE INDUSTRIES INC.
Box 101, Dept. IEN, Dayton 4, Ohio



Details on request

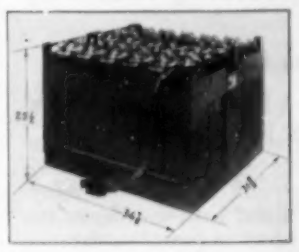
Basic diameter of this new miniature speed reducer is 1¼ inches. Diameter of the input shaft is 3/16 in. and of the output shaft is 5/16 inch. Length is dependent on the specified reduction ratio which ranges from 18.78 to 21,808 to 1. The illustrated unit is about half actual size.

The reducer is particularly intended to convert high speed into high torque. Continuous rating is to 1,000 inch ounces. This rating can be exceeded for intermittent operation. In addition to the cylindrical assembly shown, a flanged rectangular housing can be supplied for base mounting.

If you write maker identify as **IEN - 7875**

BATTERY . . For industrial trucks, employs nickel-iron-alkaline design

Source: THOMAS A. EDISON INCORPORATED
51 Lakeside Ave., Dept. IEN, West Orange, N. J.



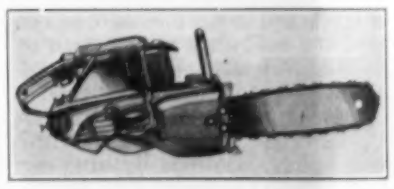
For limited space

The cells of this new Type-MC storage battery employ the standard steel tube and pocket construction of plates developed originally by the company. They are also identical in electrical characteristics and ratings. Six sizes rate 285 to 710 ampere hours. The smallest Type MC4 is a 10-cell assembly rating 3.42 kwh. The largest Type MC10 employs 42 cells and is rated at 35.78 kwh. Dimensions of the 30-cell Type MC8, rating 20.52 kwh., are shown in the illustration.

If you write maker identify as **IEN - 7876**

WOOD WORKING . . Chain saw, engine driven, 12 to 42 in. cutter bar

Source: MALL TOOL CO.
7740 S. Chicago Ave., Dept. IEN, Chicago 19, Ill.



For utility use

Drive for this new chain saw is by a 3-hp. single cylinder two-cycle air cooled gasoline engine operating at 5,000 rpm. The engine is equipped with an automatic centrifugal clutch that prevents stalling and with an oiler for the chain sprocket and chain. The assembly also includes a re-wind starter and a finger operated throttle control. The assembly weighs 24 pounds. It is known as Model OMG and lists for about $200.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7877**

FREE SAMPLE KIT PROVES BIG TIME SAVINGS!

SEMS-by-SHAKEPROOF

Tedious separate lock washer handling is completely eliminated. Specially designed SHAKEPROOF® Lock Washers are pre-assembled to screws—two parts are handled as one! Held on by the rolled thread, the washer can't drop off!

SEND FOR FREE TEST KIT NOW!

® T. M. REG. U. S. PAT. OFF.

SHAKEPROOF
"Fastening Headquarters"
DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois
Offices in principal cities

If you write maker identify as **IEN - 7878**

NEW MANCO HYDRAULIC RIVETER

Here's fast, silent, and powerful hydraulic riveting. Riveting cycle only one second. Easy-to-operate hand lever valve mounted on riveting head. No solenoids. Capacity for ¼" and 5/16" rivets. Adjustable pressure setting for use on straight and shoulder rivets. Riveting yoke reach is 1¾" with a gap of 1⅜" including rivet sets. Other yokes also available. Full swivel about cylinder axis permits easy placement. Compact electric hydraulic pump. Weight of riveting head . . . 18 lbs.

Model R-211-188E

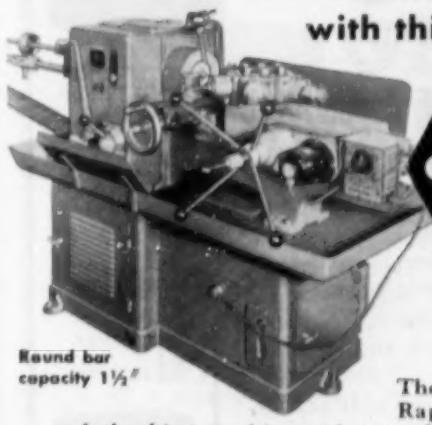
Other Manco Riveters are available with capacities from 10 to 150 tons. Send us your riveting problem.

Dept. N-7

MANCO *mfg. co.*
Bradley, Illinois

If you write maker identify as **IEN - 7879**

OSTER NO. 601 RAPIDUCTION NOW PRODUCES MORE THAN EVER with this new POWER CARRIAGE FEED!



Round bar capacity 1½"

The Oster No. 601 Rapiduction bar and chucking machine with new electric-powered carriage feed increases output . . . reduces operator fatigue . . . assures *consistent* quality.

Power feed is also available in a complete packaged unit for quick, easy installation on No. 601 machines now in use.

Write us for complete information, and the name of your nearest Oster Rapiduction Dealer.

THE OSTER MANUFACTURING CO.
Main Office and Factory:
2053 East 61st St. • Cleveland 3, Ohio

Builders of High Quality Metal-Working Machinery Since 1893

If you write maker identify as **IEN - 7880**

NEW NIBCO SILLCOCKS *packed with quality!*

and at Competitive Prices!

Specify the NIBCO matched line of Sillcocks, Angles, Stops, Stop and Wastes, Oil Tank Valves, Boiler Drain Valves at your jobber's. Write for new Catalog NVC-1, Supplement A.

NIBCO NORTHERN INDIANA BRASS CO.
761 PLUM STREET, ELKHART, INDIANA

If you write maker identify as IEN - 7881

CAPCO Dock Covers completely enclose the space between car and building doorways protecting loading and unloading during bad weather... preventing accidents... insuring against loss of heat or refrigeration. 51 different models in any size for every loading problem.

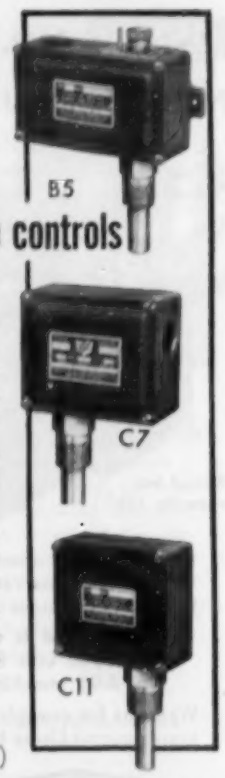
CAPCO

Write for literature and name of nearest distributor.

622-24 PROSPECT AVENUE • KANSAS CITY 24, MISSOURI

If you write maker identify as IEN - 7882

WHEN COMPACTNESS AND VERSATILITY ARE REQUIRED . . .



specify these UE temperature controls

These precision-built UE controls are inexpensive, compact and easily installed—ideal for hot water tanks, internal-combustion engine cooling systems, boilers, etc. Type B5 is calibrated; Type C11, rugged bronze construction for marine use, and both C11 & C7 have shock and vibration resistance features.

All three types have wide adjustable temperature ranges and uniform on-off differential. Switch ratings are 15 amps at 115 or 230 volts AC. DC or 20 amp AC switch and separable sockets for easy maintenance are available.

Write today for bulletins:
Type BS (#2-1), C11 (#2-3), C7 (#2-4)

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

If you write maker identify as IEN - 7883

NOW—A LABELING AND PROTECTIVE TAPE THAT STICKS TO *OILY* METAL!

Oily Metal Motor Case Stampings Identified by OIL-STIK Label

LABELON Pressure-Sensitive OIL-STIK TAPE

STICKS TIGHTLY, YET STRIPS OFF CLEANLY
AVAILABLE PLAIN OR PRE-PRINTED
WIDE RANGE OF COLORS
WIDTHS FROM 1/2" TO 32"
CAN BE WRITTEN OR PRINTED ON AT POINT OF USE

OIL-STIK Tape Protects Bearing Surface Still Wet with Cutting Oil

Nothing else like it—and already acclaimed by leading metal working companies! Engineers, supervisors, inspectors, stockroom and shipping clerks use OIL-STIK to *identify* fabricated metal parts, tools, dies, jigs, machinery . . . to *protect* precision-finished surfaces. If you have an *oily surface* labeling problem, investigate the sensational new Labelon OIL-STIK Tape today!

For samples and prices, see your dealer—or write Dept. IEN-7.

LABELON TAPE CO., Inc. 450 Atlantic Ave. Rochester 9, N. Y.

If you write maker identify as IEN - 7884

CONVEYING . . Steel belt unit is wheel mounted on hardened runways

Source: WEST BEND EQUIPMENT CORP.
323 Water St., Dept. IEN, West Bend, Wis.

Available for specified use

Steel sections, made of 14-gage cold finished steel, are linked together with ¼-in. bolt pins. They are fitted with ball bearing rollers to ride on hardened runways on the supporting frame. The rollers are grease lubricated and sealed. Minimum length of a section, 10 ft. is made up equally of a drive section and an idler section equipped with a screw take-up.

Self-aligning ball bearing pillow blocks support the drive and idler shafts, a geared-head enclosed motor drives steel sprockets that provide positive engagement. The conveyor is available in 12 to 60-in. width and in length starting at 10 feet.

If you write maker identify as IEN - 7885

VISE . . With stand for pipe, includes a built in folding tool tray

Source: RIDGE TOOL CO.
Clarke St., Dept. IEN, Elyria, Ohio

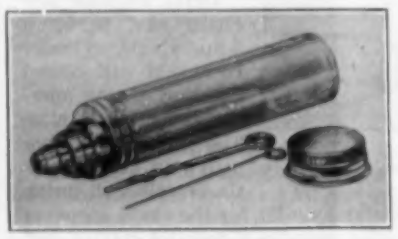
Folds to carry

Tristand 40A is a new assembly of pipe vise, portable stand and built-in tool tray. The stand base overhangs the front legs to provide clearance for threading tool handles. Equipment includes three pipe benders, a ceiling brace screw, pipe rest and various tool hanging slots.

The feet are equipped with rubber grommets to hold the stand in set position. Two assemblies rate ⅛ to 2½ in. and ¼ to 4 in. in vise capacity. The former is fitted with a yoke and the latter with a chain vise.

If you write maker identify as IEN - 7886

One of the chief causes of tip failure in gas torches, damage while the tip is not in use, has been stopped by National Cylinder Gas Co., 840 N. Michigan Ave., Dept. IEN, Chicago 11, Ill., by packaging the tips individually in plastic containers. Each container also holds two cleaners for the high pressure-oxygen and the preheat orifices to keep them accessible and from being lost.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7887

Easily-installed units for high-efficiency air movement in all duct systems. Direct-driven types for atmospheres within safe motor operating limits or belted models for hazardous fumes, vapors and excessive temperatures. Sizes 12" to 84" with 2, 4, 6, or 7 blades. Capacities to 120,000 C.F.M.

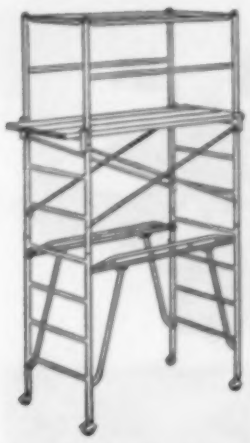
other models for every air-moving requirement

All Aerovent Fans are rated in accordance with the Standard Test Code and U.S.D.C. Comm. Std. CS178-51.

Ask for free folder D-50!

Aerovent Fan Company, Inc.
Ash and Brown Streets Piqua, Ohio

If you write maker identify as IEN - 7888



Narrow Areas No Barrier for WACO ROLLING TOWER *with ladder frames*

WACO Rolling Tower with Ladder Frames offers complete scaffolding freedom in narrow areas. Only 29½" wide, this Rolling Tower can be rolled down narrow aisles, through any standard doorway, or into crowded corners. Straddle brace allows ladder section to be easily wheeled over desks, chair, filing cabinets and other obstacles. Guard rails afford complete protection. WACO Rolling Towers with Ladder Frames are equipped with all the famous WACO features—heavy-duty rubber tire wheels . . . brake-type casters . . . Built-in, floating coupling pins. WACO "Speedlock Assembly" eliminates bolts, wing nuts, special assembly tools, WACO Rolling Tower with Ladder Frames is designed to give speed, safety, economy in scaffold erection and use. For complete information, see your WACO dealer or write to

WACO *Manufacturing Company*
3567 Wooddale Avenue, Minneapolis, Minnesota

CANADA
Armson Irons Works, Windsor, Ont.

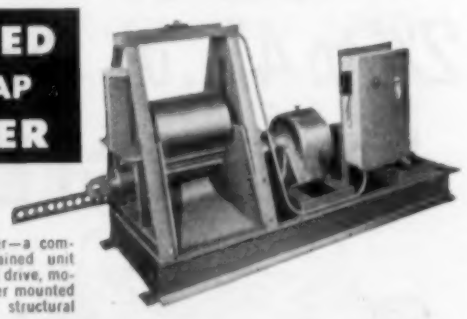
WEST COAST
Waco-May Co., Los Angeles, Cal.

If you write maker identify as IEN - 7889

MAKES BALES

of strip shearings — stringy scrap

ALLIED SCRAP BALER



The Allied Baler—a complete, self-contained unit including geared drive, motor and controller mounted on a portable, structural steel base.

Lead-in piece is hooked to winding spindle. Tangled mass is dragged in.

Bale partly formed. Compacting roller and contour of baling box form dense uniform bales.

Full bale completed; 19" dia., 19" lg., approx. 400 lbs. ready for sale.

Write for further information.

Allied Steel and Conveyors, Inc.
17311 Healy Ave. • Detroit 12, Mich.

If you write maker identify as IEN - 7890

FREDDY FEDERAL SAYS:
Hurdle ALL your Short Run Stamping Problems with *ONE JUMP* WITH *Federal* SHORT RUN STAMPINGS

SAVE UP TO 80% OF CONVENTIONAL TOOLING

Willing to invest 3¢ on a sure winner? Federal leads in low cost, high quality "Controlled Tolerance" stampings, because they have complete die-making facilities and properly trained personnel to handle any job, large or small. Federal is equipped to stamp sizes and shapes up to 9"x12", and up to 1/16" thick, in any quantity from 2 pieces to 10,000 from any stampable material (metal, fibre, phenolic, plastic, etc.) Be the winner by sending us your drawing today for quotation and prompt delivery schedule.

see our catalog in PRODUCT DESIGN FILE or write for copy

Write for bulletin 101

Federal TOOL AND MANUFACTURING CO.
3612 ALABAMA AVE. (ST. LOUIS PARK)
MINNEAPOLIS, MINNESOTA
"QUALITY STAMPINGS IN SMALL QUANTITIES"

If you write maker identify as **IEN - 7891**

THE SWING IS TO EMSCO

BALL BEARING SWIVEL FITTINGS

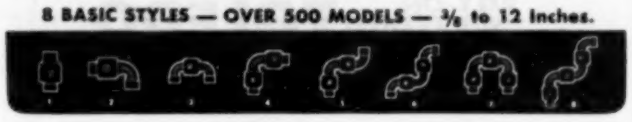
- **360° FREE TURNING 1, 2 & 3 PLANES**
- **EFFICIENT PACK-OFF**
- **SAFE, LONG-LASTING**

For liquids, semi-solids, gases, steam, chemicals, etc. Hot or cold service. Continuous or occasional rotation. Pressures to 15,000 P.S.I. and temperatures to 750° F. Unique packing design permits easy maintenance while in operation.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe sizes and indicate style as shown below. Also end connection desired; threaded, flanged or weld ends.

EMSCO MANUFACTURING COMPANY Los Angeles 1, California

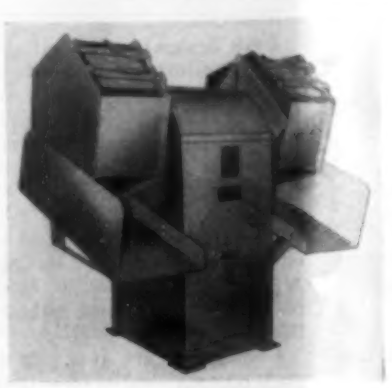
8 BASIC STYLES — OVER 500 MODELS — 3/8 to 12 Inches.



If you write maker identify as **IEN - 7894**

TUMBLING . . Two barrel assembly has chutes to separate work and liquid

Source: RAMPE MFG. COMPANY
3320 St. Clair Ave., Dept. IEN, Cleveland 14, Ohio



Chutes tilt

Super Twin designates this new assembly of the company's tumbling equipment, previously described IEN-4563-54. The new unit provides 2 cu. ft. of capacity per barrel which is twice that of the previous unit. The barrels are driven by a 3/4-hp. three-phase motor operating on 220/240 volts. Variable speed transmission provides for operation at 12 to 36 rpm.

The steel barrels are hexagonal in shape. They are made of 10-gage steel in welded construction and are fitted with covers secured by two clamps. They can be supplied plain or lined with vinyl plastic. Gaskets under the covers prevent leakage.

Movable chutes can be tilted to the rear to drain off liquid and to the front to discharge a load. They act as safety guards in rear position. Tote boxes are available in place of the chutes. Control centers at a water-tight push button and magnetic starter. List price ranges from $735 to $995 depending upon the specified equipment.

If you write maker identify as **IEN - 7897**

To save money on crane runway maintenance

● This important booklet describes our three Special Crane Rail Sections, which were designed to give longer life under heavy wheel loads. And it shows a special technique of tight-joint-assembly which, when combined with a new conception of "floating rail" fastening, will result in fewer delays in crane operation and less costly crane and runway maintenance.

Don't delay, send for your copy today. Just write to United States Steel Corporation, Room 4346, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

USS SPECIAL CRANE RAIL SECTIONS

UNITED STATES STEEL

If you write maker identify as **IEN - 7892**

READ WHAT **BLOOMER** OF CHICAGO SAYS
ABOUT **WALES HOLE PUNCHING UNITS**
MONEY AND TIME SAVING FEATURES . .

BLOOMER HEATING & VENTILATING CO.
Contractors - Fabricators
1837 WEST 4TH STREET · CHICAGO 8, ILL.

February 26, 1954

Wales-Strippit Corporation
408 Madison Avenue
Oak Park, Illinois

Attention: Mr. Homer C. Gray

Gentlemen:

Very seldom in the operation of a fabricating plant have I come across such cost and time saving opportunities as have been made possible by Wales Hole Punching Units.

To give you a little background, my company bid a job, based on our former gang punching method of tooling, and after we received the order as low bidder, I investigated and bought Wales Units. In addition, we purchased another press brake. The cost records show that we not only paid for these Wales Units and the press brake with this one job but also made our normal profit on the job. We also bettered our delivery estimate by six weeks. Since the completion of this first order I have been using these same Wales Units on similar jobs.

My experiences have proven that setups with Wales Units are eight times faster than our former gang punching methods. Press down-time between setups is practically eliminated by mounting these Units on templates outside the press and just placing the entire assembly on the press bed, ready to start punching.

We were able to double the rated press capacity by staggering the shut height of Wales Units with caps on top of punches. Your Wales Units eliminate stripping problems, spoiled work from improper stripping and broken punches.

I thought you would be interested in these highlights of my experience with your tooling equipment and so I am enthusiastically passing along to you the results of my experiences with Wales Hole Punching Units. I am also enclosing photographs of your equipment in operation.

Very truly yours,

BLOOMER HEATING & VENTILATING COMPANY

E. Ellis
Plant Superintendent

EE:rp

"NOT ONLY PAID FOR THESE WALES UNITS AND THE PRESS BRAKE BUT ALSO MADE OUR NORMAL PROFIT ON THE JOB"

"ELIMINATE STRIPPING PROBLEMS, SPOILED WORK FROM IMPROPER STRIPPING, AND BROKEN PUNCHES"

"SETUPS WITH WALES UNITS ARE 8 TIMES FASTER THAN OUR FORMER GANG PUNCHING METHODS"

"ABLE TO DOUBLE THE RATED PRESS CAPACITY BY STAGGERING SHUT HEIGHT OF WALES UNITS WITH CAPS ON TOP OF PUNCHES"

This letter from Bloomer Heating & Ventilating Company points out typical time saving and money saving advantages that are also experienced by the thousands of users of Wales Hole Punching Units.

Patented, independent, self-contained Wales Units permit the same group of units to be used and reused in unlimited hole punching setups without aligning punches and dies in the press.

Write for the fully-illustrated, functionally colored catalogs that completely describe Wales Hole Punching Units.

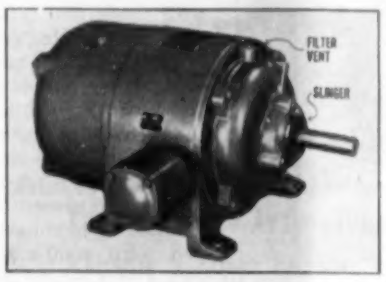
WALES-STRIPPIT CORPORATION
George F. Wales, Chairman
361 **Payne Avenue, North Tonawanda, N. Y.**
(Between Buffalo and Niagara Falls)
Wales-Strippit of Canada, Ltd., Hamilton, Ontario

Specialists in Punching and Notching Equipment

If you write maker identify as **IEN - 7895**

MOTOR . . Totally enclosed ac., fan cooled, to exclude taconite dust

Source: U. S. ELECTRICAL MOTORS INC.
Box 2058, Dept. IEN, Los Angeles 54, Calif.



Keeps out magnetic dust

Taconite dust, which is highly magnetic and tends to embed itself in motor windings and to clog the air gap between the rotor and stator, is excluded from this new special motor design by seals provided with long sleeves made of non-magnetic material and fitted closely. The seals are brass and bronze so the two dissimilar metals will be in operating position to each other to present a non-magnetic path. The end brackets and their retaining bolts are sealed with compound. A filtered low resistance path is provided in the housing so any tendency on the part of the motor to "breathe" will not draw the fine dust through the bearings.

Lubriflush bearing housings maintain a volume of grease around each bearing. The motor windings are armored with asbestos baked and rebaked after each dipping of the wound stator. In addition to operating in mills handling taconite, the motor is suited for locations where the atmosphere is filled with abrasive dust such as in cement mills, foundries, ore crushing plants, rock product plants.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7898**

D.O.James

Established 1888

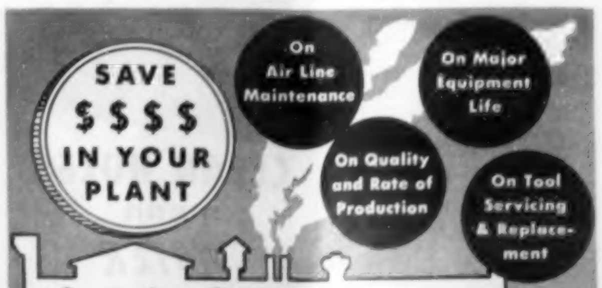
GEARS For INDUSTRY

SINCE 1888 . . . We have been making many types and sizes of gears for industry. Vast plant facilities of the most modern gear cutting equipment assure capable handling of your *production* or *special* gear requirements.

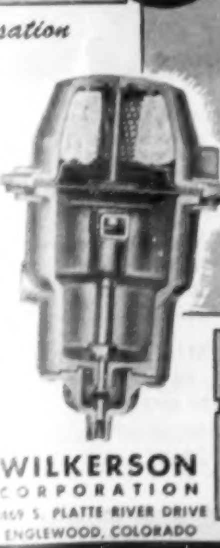
HELICAL and BEVEL GEARS—From 1" to 60" in diameter and from 24 DP to 1½ DP.
SPUR GEARS—Size range from 3/4" to 150" in diameter. 32 DP to 3/4 DP.
HERRINGBONE GEARS—Made from 1" to 60" in diameter and from 10 DP to 1½ DP.
SPIRAL BEVEL GEARS—Made from 1" to 30" in diam. and 24 DP to 1½ DP.
WORM GEARS—Made from 1" to 100" in diam. and from 24 DP to 1 DP.

YOUR GEAR INQUIRIES WILL RECEIVE IMMEDIATE ATTENTION
D. O. JAMES GEAR MANUFACTURING COMPANY
1140 W. MONROE ST. • CHICAGO 7, ILL.

If you write maker identify as **IEN - 7896**



Cure Air Line Condensation
WITH WILKERSON
Automatic Moisture Separators



Nearly a decade of satisfied customers prove Wilkerson units cut production costs wherever compressed air is in daily use. Positive action; highest efficiency in forcing condensation regardless of air volumes handled. You are assured cleaner, drier air, with less pressure drop, than with any comparable unit.

WRITE FOR CATALOG-BULLETIN
Tank Drains, Air-line Separators, Sump Drains — Automatic and Manual Units for High- or Low-Pressure Systems, up to 10-in. Lines.

WILKERSON *Automatic Air Products*

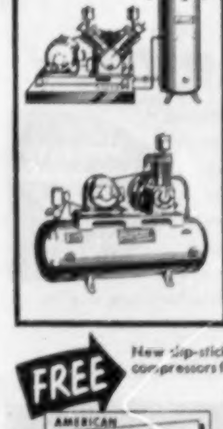
WILKERSON CORPORATION
3469 S. PLATTE RIVER DRIVE
ENGLEWOOD, COLORADO

SERVICE-DISTRIBUTORS THROUGHOUT THE U.S.A.

If you write maker identify as **IEN - 7899**

MORE FREE AIR PER HORSEPOWER

Kellogg-American



AIR COMPRESSOR PUMPS, 1/3 TO 20 HP
Engineered and precision built to give more *free air* (actual air delivered) per hp, Kellogg-American compressors assure maximum air delivery, efficiency and service life. Single or two stage, 1, 2 or 4-cylinder units available for pressures up to 200 psi; displacements to 105.9 c. f. m.

COMPLETE AIR COMPRESSORS, 1/3 TO 20 HP
Portable or stationary; skid, remote tank or tank mounted; electric motor or gas-engine-driven models permit you to select the most efficient, economical compressor for every job. Write Dept. I N-2 for Bulletin K-307.

FREE New slip-stick selector to help determine the right Kellogg-American air compressors for your needs. Send for yours on company letterhead today.

KELLOGG DIVISION
ROCHESTER 9, N. Y.

AMERICAN Brake Shoe COMPANY

Kellogg-American
1/3-20 H.P. AIR COMPRESSORS · PAINT SPRAY · EQUIPMENT

If you write maker identify as IEN - 7900

HEAR HERE

NEW Model 45 Acousti-Booth — spacesaving configuration provides amazing acoustical performance.

50% Reduction in loudness of noise — 14 db attenuation — provides full-length Booth performance.

New triangular configuration permits 7 spacesaving multiple Booth arrangements.

All steel, doorless construction — silver gray hammered finish — easy installation — no maintenance.

WRITE for Bulletin A-131 for details, including auxiliary floor stand, light fixture, and brackets.

ORDER TODAY

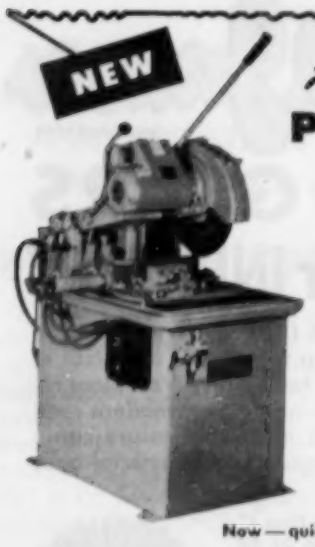
ONLY $100.00
F. O. B. CHICAGO
light fixture extra

MODEL 45
35½" wide—32" deep—36" high.

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway
Chicago 31, Illinois

If you write maker identify as IEN - 7901

NEW



Automatic POWER-FED Cutting Head

for STONE Model M-75

ONE SIMPLE LEVER FOR AUTOMATIC CUTTING

Now — quicker — safer — cutting with controlled feeds, gives even greater efficiency to Stone High-Speed cutting equipment. The automatic feed improves the quality of cut, eliminates operator fatigue, increases production rates and increases wheel life.

You Save up to 25% on wheel costs with power feed!

AVAILABLE AS OPTIONAL EQUIPMENT ON NEW MACHINES OR AS SEPARATE UNIT FOR INSTALLATION ON PRESENT MACHINES.

Write Today For Complete Information

STONE MACHINERY CO., INC.
Fayette St. Manlius, N. Y.

If you write maker identify as IEN - 7902

The Right Combination for

PERFECT MARKING

Speed up your marking operations . . . assure absolute uniformity . . . use Matthews Interchangeable Holders. Engineered for every industrial marking application, designed to provide safer operation, faster type changing and positive type holding. Matthews precision engraved steel type completes the picture. Write today for complete literature and information.

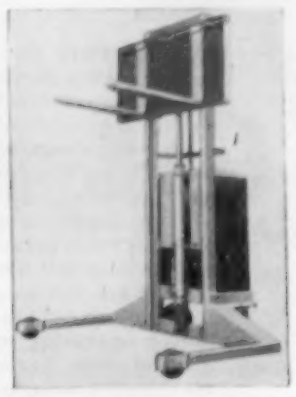
Matthews Interchangeable Holders and Type

JAS. H. MATTHEWS & CO.
3948 FORBES ST. PITTSBURGH 13, PA.
BOSTON • CHICAGO • PHILADELPHIA • CLIFTON, N. J.

If you write maker identify as IEN - 7903

ELEVATOR . . Portable hydraulic to stack 750 pound palleted loads

Source: ECONOMY ENGINEERING CO.
4511 W. Lake St., Dept. IEN, Chicago 24, Ill.



Straddle type

Fork design is now available on the company's battery powered electric drive hydraulic Worklifter to pick up and stack palletized loads. The unit is known as Type WL-F. It rides on two 8-in. solid rubber swivel casters and two 5-in. solid rubber fixed wheels, all equipped with roller bearings. A foot operated lock holds position when a load is being lifted or lowered.

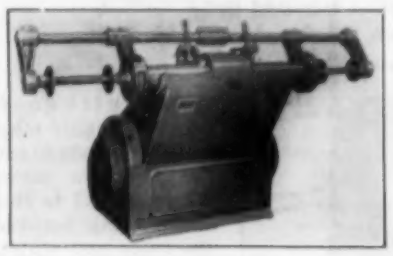
Control centers at a pair of push buttons located on a 12-ft. cord attached to a Reelite retriever. Lift and lower movements are at 34 fpm. Either one continues as long as the control button is kept depressed.

Two models measure 78 and 98 in. in height with fork lifts of 58 and 78 inches. Both can be specified in various widths to handle pallets to 36 in. in length by 42 in. in width. Power is supplied by two 6-volt batteries connected in series. A charger is included so the unit can be plugged into a 110-volt ac. line when not in active service.

If you write maker identify as IEN - 7904

POLISHING . . Two spindle machine takes 20 by 16 in. buffing wheels

Source: HAMMOND MACHINERY BUILDERS INC.
1600 Douglas Ave., Dept. IEN, Kalamazoo, Mich.



Two machines in one

Two spindles, each with three ball bearings, are mounted end to end in this new Model-RRO polishing and buffing machine. It is a special design for use on large and irregularly shaped parts to be presented by hand or in connection with semi-automatic equipment. Each spindle has its own V-belt connected driving motor. Spindle speed can be specified at any point between 1,800 and 3,000 rpm. Two operators can work side by side. Each can change his wheel without interfering with the work of the other.

If you write maker identify as IEN - 7905

Pulsating pressure tests can be made with a modified design of the Airhydropump, previously described IEN-3091-52. Air pressure from a plant source applies on one side of the pump to generate hydraulic pressure on the other, primarily for pressure testing. Now a single-acting assembly, with 1,000 lb. on the hydraulic side and a ratio of about 1 to 56, can be pulsed at 4 to 20 reversals per minute. Davies Brothers, 120 Wall St., Dept. IEN, New York 5, N. Y., can supply the modified pump.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7906

A burr, a chip, oil, foreign particles in drilled, tapped or cored holes—all take a toll of assembly time and often mean a tearing down job, cleaning and reassembly after inspection.

You can eliminate these bugaboos by cleaning out all holes with the correct Mill-Rose brush—made for the job—of exact size—with the right selection of wire or bristle fill.

Made single or double spiral—for hand or power use—in sizes from .065" up and in every degree of stiffness to meet varied job requirements.

Write for descriptive bulletin or outline a problem where a Mill-Rose trusted-in-wire brush might be helpful to you.

HIGH PRECISION INDUSTRIAL BRUSHES TWISTED IN WIRE

The MILL-ROSE Company 1981 East 59th Street Cleveland 3, Ohio

If you write maker identify as IEN - 7907

NEW Improved TOLEDO Simpact

1" to 2" Self-Contained Ratchet Threader

WITH *CAM-TYPE* PIPE HOLDER

★ *Improved* cam-type quick-action pipe holder has broader jaws for more positive grip on pipe.
★ Free action cam assures instant setting to any size—1" to 2".
★ Easy to center . . . you get perfect aligned threads.
★ Fewer moving parts . . . minimum wear . . . light in weight. Amazingly compact . . . will thread a pipe projecting through a wall as short as 6¼".
★ Accuracy proven through the years . . . dies recede along tapered steps. A fine quality tool—yet low in cost! Write for new catalog. Order through your supply house. The Toledo Pipe Threading Machine Co., Toledo, Ohio. New York Office: 165 Broadway, Room 1310.

RELY ON THE LEADER! **TOLEDO**
PIPE TOOLS . . POWER PIPE MACHINES
POWER DRIVES

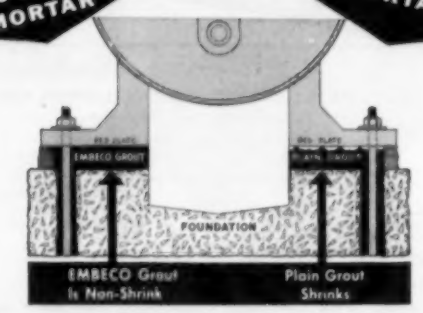
If you write maker identify as IEN - 7908

see what happens when you grout

equipment or machinery with . . .

EMBECO FLOWABLE MORTAR

PLAIN MORTAR



The majority of leading heavy equipment manufacturers recommend using EMBECO grout, because Embeco counteracts shrinkage and provides ductility, overcoming the two principal causes of failure in equipment grouts. Embeco produces an easily placeable mortar yet insures full, level bedplate contact; provides high early and ultimate strengths. These benefits are important for all equipment subject to impact, pounding action, vibration or wear.

Write for 16-page illustrated booklet on grouting.

The MASTER BUILDERS Co.
Cleveland 3, Ohio — Subsidiary of American-Marietta Company — Toronto, Ontario

If you write maker identify as IEN - 7909

Specify AIRMATIC QUALITY FOR:

1. FLOW CONTROL VALVES
2. SEQUENCE VALVES
3. PRESSURE REGULATORS
4. CYLINDERS
5. SOLENOID VALVES

Write for Complete Details about AIRMATIC Products

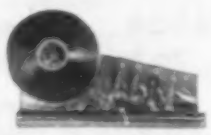
Attractive O.E.M. and Quantity Discounts

Delivery from Stock —Immediate

AIRMATIC VALVE, INC.
7317 Associate Ave. • Cleveland 9, Ohio

If you write maker identify as **IEN - 7910**

maybe these aren't your products



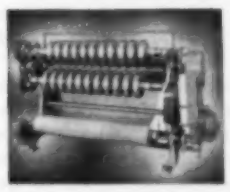
METAL THREAD FOR YARN

KITCHEN CURTAINS

BLANKET STORAGE BAGS

but if your problem is slitting

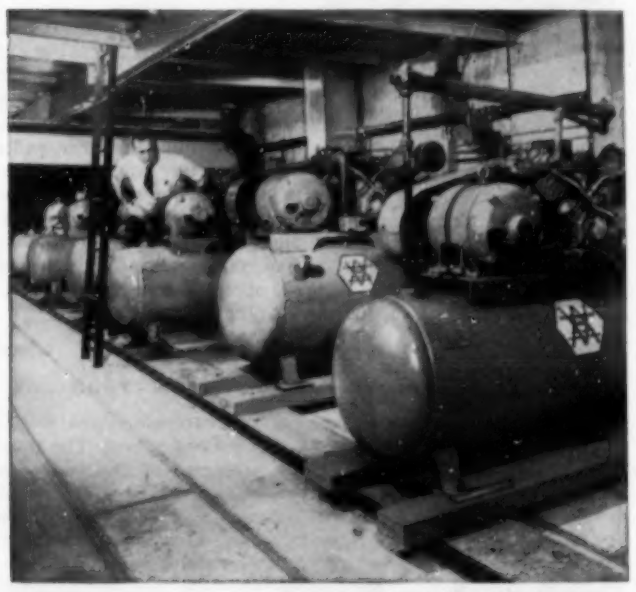
. . . here's the answer



If you want to slit cellophane, polyethylene — any of the films — or even foil laminates, glassines or wax paper . . . the Beck Razor Blade Slitter and Rewinder is your answer. At Acme Backing Corporation, Brooklyn, it helps slit large rolls of metal foil into slender threads for yarn . . . at Charles Schwartz and Company, Chicago, it speeds up production of plastic kitchen curtains and blanket storage bags. If you have a slitting problem . . . write:

CHARLES BECK MACHINE CORPORATION
412 N. 13th Street Philadelphia 8, Pa.

If you write maker identify as **IEN - 7911**



Seven air compressors, running 20-24 hours a day, give excellent service at the Allen-Stevens Corporation, Jamaica, New York.

Job-Site compressor plants

keep pressures UP keep air costs DOWN

- Use several small air compressors instead of one big one and you'll reduce operating costs and repairs—and keep production running smoothly.

Several small compressors, piping air through a common manifold or to individual groups of equipment, give you continuous service. You're never without air. When one compressor plant is down for routine maintenance, the others can carry the load. When air requirements slack off, some of the compressors in the gang can be shut off to reduce wear and operating costs. And, when air requirements exceed the present capacity, another small compressor can be added—economically.

When you plan your *job-site* air supply, be sure to use dependable Westinghouse Air Compressors. They come in a wide range of sizes, with such exclusives as: controlled pressure lubrication, low oil level protection, positive starting unloader.

Your Westinghouse Air Compressor distributor has a complete stock of compressors and accessories. He can give you fast efficient repair service, and a complete survey of your air needs.

Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.

Manufacturers of air compressors, pneumatic cylinders, actuators, air control devices of all kinds, engineered pneumatic control systems and front end loaders.

In CANADA: CANADIAN WESTINGHOUSE CO., LTD., HAMILTON, ONTARIO
FACTORY BRANCH: EMERYVILLE, CALIF.

If you write maker identify as **IEN - 7913**

MARKING . . Dial feed machine applies inked type on flat work pieces

Source: MARKEM MACHINE CO.
150 Congress St., Dept. IEN, Keene 42, N. H.

Motor driven

Operating speed of this new Model-25AD machine is 30 to 60 strokes per min. to mark work carried in evenly spaced stations around the surface of a dial feed mechanism. Feed can be hand operated or tied in with the machine operation. Fixtures can be mounted on the table top for various work pieces.

The marking area measures 11 in. from left to right and 5 in. from front to back. The company is prepared to supply suitable inks and marking compounds for use on paper, plastic, fiber, metal or other specified material.

If you write maker identify as **IEN - 7914**

BRUSH . . Miniature twisted design filled with wire, nylon or hog bristle

Source: MILL-ROSE COMPANY
1985 E. 59th St., Dept. IEN, Cleveland 3, Ohio

For special uses

Diameter ranges from 0.06 to 0.124 in. in increments of 0.001 in. in this new Mini-Brush. It applies to clean out small holes, to remove scale, burrs, flash. The bristle fill is accurately sized. Metal bristles can be made of stainless steel, ordinary steel or brass to meet the application.

If you write maker identify as **IEN - 7915**

MAGNIFYING . . Illuminated lens to read fine type, inspect small work

Source: BAUSCH & LOMB OPTICAL CO.
635 St. Paul St., Dept. IEN, Rochester 2, N. Y.

List is $8.50

Rectangular lens in this new magnifier measures 3¾ by 1⅞ inches. It is permanently sealed in a molded plastic frame equipped with an angular handle. An electric lamp, in the base of the handle, floods the field view with soft glare-free light upon plugging into a 110-volt circuit. The magnifier applies about 9 in. away from the user's eyes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7916**

here it is the single unit

Want a complete heat-treating department?
LOW COST...COMPACT DESIGN ...HIGH PRODUCTIVITY

Features include:

1. *Heating Furnace with range of 1000° to 2400° F. automatically controlled (12" wide x 10" high x 18" deep).*
2. *Tempering or Drawing Oven is recirculating type. Work is constantly bathed with evenly distributed high velocity and held to constant temperature by automatic control. Alloy steel lined with perforated shelf, has range of 250° to 1100° F. (21" wide x 10" high x 18" deep).*
3. *Furnace and Oven doors equipped with foot treadles.*
4. *Two Quench Tanks for oil and water. By means of double wall construction, oil tank is entirely surrounded by water for cooling oil, thus producing more uniform quenching.*
5. *Automatic electronic type controls.*
6. *Shipped ready to install by simply connecting gas and electric power line.*

Think of the many advantages and economies of having a complete heat-treating department in your own shop, ready whenever you need it. No waiting! No production tie-up! No expensive outside services! Think how much money you could save the very first month! It heat-treats, quenches, draws, stress-relieves, normalizes, anneals, with controlled atmospheres. Reasonably priced, too! Complete line of WALTZ standard or special heat-treating furnaces, using all types of fuels are built to suit your requirements.

Write Dept. A for comprehensive illustrated bulletins.

Waltz FURNACE COMPANY
SYMMER STREET • CINCINNATI, OHIO

If you write maker identify as **IEN - 7917**

LIFTING and LOADING is *EASY* with double-duty hoist

Switches to truck crane in seconds.

Fits on 4-wheel shop frame.

Easy, one-handed operation of hydraulic Unit "Utility Hoist" handles loads from 1,000 to 2,000 lbs. Choice of either manual or electrical operation. Instantly removable from 4-wheel floor truck to well mounted on truck bed, work bench, loading dock or machine tool. Write for prices, complete information.

UNIT MFG. CO. 1221 HARMON PLACE MINNEAPOLIS, MINN.

If you write maker identify as **IEN - 7918**

This Building is TOPS

Expanding business often demands more space—but sometimes there's no more room for new buildings. What to do? Why not install Armco Steel Building penthouses on roofs of existing industrial buildings? Shown here is a typical installation by a large company.

The light weight of STEELOX Panels simplifies problems of roof-top structures. Yet, they have ample strength to make a sturdy, rigid building. You choose from a wide range of building sizes to meet every need.

Erection of Armco Steel Buildings is easy, fast and economical. They are noncombustible, weather-tight, and need little upkeep.

WRITE FOR THE COMPLETE MONEY-SAVING STORY

ARMCO DRAINAGE & METAL PRODUCTS, INC.
3594 Curtis Street, Middletown, Ohio

If you write maker identify as **IEN - 7919**

with....

CONE-DRIVE double-enveloping Worm Gear Speed Reducers!

'Double-enveloping' — wrapping worm and gear around each other—is the secret of Cone-Drive gear's compactness.

As a result, smaller gears can be used to carry a load when you specify Cone-Drive gears —up to ⅓ smaller housings, too.

If space saving is a design need, it will pay you to look into Cone-Drive gears and reducers . . . NOW.

Ask for Bulletin 8901-50

CONE-DRIVE GEARS
Division Michigan Tool Company
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
7171 E. McNichols Road • Detroit 13, Michigan

If you write maker identify as IEN - 7920

NEW!

L-S Handy Hoister

Lewis-Shepard's newest Master Line Materials Handling Truck — the Battery Powered Handy Hoister — provides lift speeds up to 25 feet per minute with 1000 lbs. loads . . . at a low first cost. Perfect for stacking dies, jigs and fixtures, drums, etc., where cost of an expensive power truck is not justified. Storage battery has built-in charger . . . can be recharged from any lighting circuit. Other features include 58" lift height. Single control lever for lifting and lowering. Available in either platform or straddle-type fork lift models.

WRITE TODAY FOR FULL INFORMATION

LEWIS-SHEPARD

933-7 WALNUT ST., WATERTOWN 72, MASS.

The "MASTER" Line

If you write maker identify as IEN - 7921

Cut fastening costs up to 80% on heating and air conditioning installations..with the REMINGTON STUD DRIVER

"It saves us money on every fixture we install" —that's the kind of report we're getting every day on the Remington Stud Driver. Big savings just naturally result from the amazing speed of this powder-actuated tool. It sets as many as 5 studs a minute in steel or concrete!

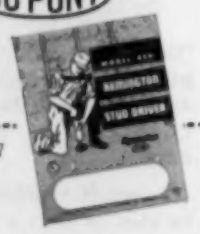
You'll find real economy, too, in the fact that the Stud Driver is completely self-powered—no need for extra equipment, wires or cables. Compact and portable, the tool is designed in every way for easy handling. And since it weighs only 6 pounds, it's ideal for working overhead and in confined spaces.

What's your fastening job? Whether it's fastening pipe to walls and ceilings or anchoring fixtures to concrete floors, you'll save money with the Remington Stud Driver. For complete information on how to cut *your* fastening costs, just send in the coupon below.

"If It's Remington—It's Right!"

Remington DU PONT

Listed & Approved by Underwriters' Laboratories, Inc.



MAIL THIS COUPON TODAY

Industrial Sales Division, Dept. I. E. N.-7
Remington Arms Company, Inc.
Bridgeport 2, Connecticut

Please send me a free copy of the new booklet showing how I can cut my fastening costs.

Name _____
Position _____
Firm _____
Address _____
City _____ *State* _____

If you write maker identify as IEN - 7923

RELAY . . Polar rotary type for sensitive action and high speed

Source: UNION SWITCH & SIGNAL
1800 Braddock Ave., Dept. IEN, Pittsburgh 18, Pa.

Bulletin 1002

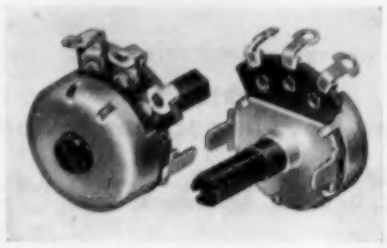
Type KP designates a relay designed originally for high speed code control installations. It is now offered also as a key component in circuits requiring exceptional sensitivity and high operating speed. The unit can operate on power from 5 to 150 milliwatts with operating time from 5 to 15 millisecond, depending upon the application. It also is available for pulsing speed at 60 cycles. Overall dimensions are 3 by 2 by 4 inches. Two designs are available with brackets for panel mounting or with plug connections.

Two types are known as "stick" and "bias". The armature of the former is operated into alternate positions by opposite polarities. It remains in the last operated position until the coils are de-energized. The armature of the latter type is operated clockwise by normal polarity. It returns to counter-clockwise or "biased" position when de-energized. Two independent operating coils can be used either separately or in combination. Coil resistance ranges from under 1 ohm to 4,000 ohms per coil. The stick type relay contains a maximum of four normal and four reverse silver transfer contacts. The biased design has a maximum of two front and two back independent contacts. Normal rating is ½ amp. on a 26-volt resistive load. Rating can be increased to 4 amp. on special applications. The action can be "snap" or "floating."

If you write maker identify as IEN - 7924

RESISTOR . . Variable design to tab mount in electronic equipment

Source: STACKPOLE CARBON CO.
1942 Tannery St., Dept. IEN, St. Marys, Pa.



Insulated shaft

Bakelite shaft, hexagon in section, extends from the front of this new Type LR6 control. Its end is slotted so adjustments can be made by hand with a 7/32-in. hexagon nut driver or with a screw driver. The rear end shaft is round and also carries a screw driver slot. It projects a little beyond the cover of the assembly. The bushingless mounting employs two ears, similar to tab mounting electrolytic capacitors, to eliminate need for a threaded brass bushing, a lock washer and a mounting nut. The front plate, containing the mounting ears, has an extruded portion that serves as a bushing to maintain shaft alignment.

Five shaft lengths range from $\frac{3}{16}$ to 1 inch. Resistance values, tapers and other specifications are in accordance with RETMA Standards. The unit measures 0.894 in. in diameter and will dissipate 0.5 watt.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 7925

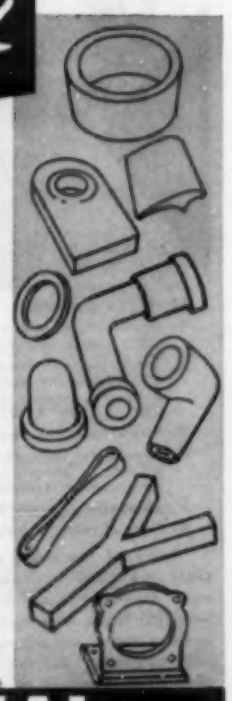
Silicone

RUBBER PARTS

may be your most efficient, most economical way to:

★ REDUCE FABRICATING COSTS
★ MEET "TOUGH" SPECIFICATIONS
★ IMPROVE PRODUCT QUALITY

Get this free ILLUSTRATED INFORMATION



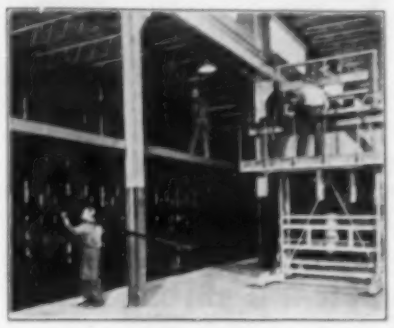
16-page booklet with data insert on Silicone Rubber, tells how this amazing material solves parts problems for manufacturers of many types of products. . . . Contains complete details on Colonial's fast, efficient rubber compounding and molding. Write to:

COLONIAL RUBBER COMPANY
Ravenna, Ohio

If you write maker identify as IEN - 7926

ELEVATOR . . Portable assembly to handle long materials in storage

Source. WEST BEND EQUIPMENT CO.
323 Water St., Dept. IEN, West Bend, Wis.



Built to order

A worker rides the platform that mounts on the two sides of the wheel equipped structural frame in this new elevator. He controls vertical movement by push buttons at his working position or by similar push buttons at floor level. The platform includes a shelf to handle long material such as pipe, tube, bar stock in and out of storage in the rack.

The elevator is brought into position by hand movement over the floor and then is held by setting two floor locks. The platform is moved up and down by a motor driven wire rope mechanism to bring the materials into loading and unloading position in storage racks. The 2-ton assembly, shown in the illustration, includes a frame measuring about 3 by 10 by 15 feet. Other sizes and capacities can be specified.

If you write maker identify as IEN - 7927

PROTECTING . . Respirator excludes toxic dust, fumes, mist

Source: AMERICAN OPTICAL CO.
12 Mechanic St., Dept. IEN, Southbridge, Mass.

Filter Type R-57

A face piece, adjustable head band and two replaceable cartridge type filters make up the assembly of this new Super Micro-Toxisol respirator. The filters exclude airborne radioactive matter and toxic dust, mist and fumes. It also protects against spores, viruses, bacteria, fungi, and radioactive compounds. Filter area is 45 sq. in. for each filter unit for a total of 90 sq. in. for the respirator.

If you write maker identify as IEN - 7928

Either 25 or 50 ft. of rubber covered extension cord, with a plug on the end, is wound on this new Cord-'n-reel. The inner end of the cord connects to a receptacle mounted in the reel hub. You plug in the extension cord, carry the reel out to about where you are going to need power and plug in your electrical appliance. Both lengths are rated at 7 amp. with list prices at about $4 and $6. The 50-ft. reel is also equipped with cord rating 10 amperes. It lists at about $8. Maker is Racine Specialty Mfg. Co., Dept. IEN, Racine, Wis.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 7929

NICE BALL BEARINGS DO BIG JOB FOR IBM

Millions of NICE No. 6083 have been produced to meet the ever expanding use of IBM Machines in industry, commerce and government. Have you investigated the design and cost saving opportunities offered by the NICE LINE?

Circuit breaker unit (actual size) in which NICE No. 6083 bearing is used as the cam following roller on the circuit breaker arm. This unit is typical of those used on several IBM Accounting Machines.

IBM Electronic Calculator Type 604

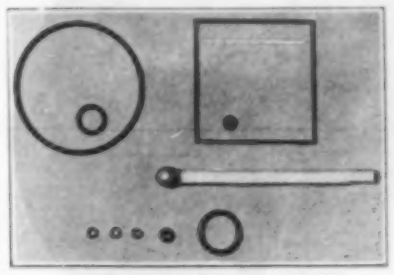
WRITE FOR NICE CAT. NO. 150

NICE BALL BEARING CO.
NICETOWN • PHILADELPHIA • PENNSYLVANIA

If you write maker identify as IEN - 7930

SEALING . . Miniature O-rings, gaskets and washers, injection molded

Source: MINNESOTA RUBBER & GASKET CO.
3630 Wooddale Ave., Dept. IEN, Minneapolis 16, Minn.



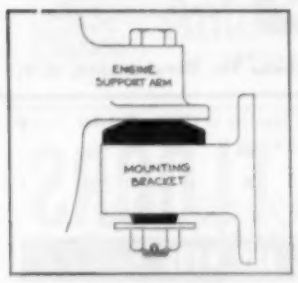
Shapes to order

The company announces availability of miniature O-rings and similar small rubber parts which it is prepared to make to specification by injection molding. The O-rings can be made as small as 0.01 in. in cross section and 0.02 in. in inside diameter. Typical applications are in watch cases, gas lighters, electronic cables, water injection carburetor nozzles, sensitive switches, miniature air valves and controls.

If you write maker identify as IEN - 7931

ISOLATING . . Vibration insulator for rear engine support in a vehicle

Source: LORD MFG. COMPANY
1635 W. 12th St., Dept. IEN, Erie, Pa.



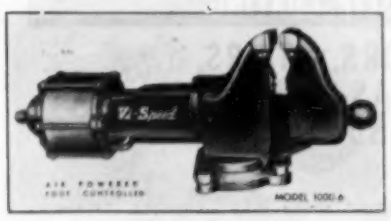
Easy to install

Load capacity is rated at 200 to 300 lb. for this new Center Bonded Mounting, J-5327-2. Rubber is compressed when the mounting is installed in the bracket. Permanent seating in the socket provides for rebound loads of 500 lb. or more.

If you write maker identify as IEN - 7932

VISE . . Air operated design, 6,500 lb. pressure on 150 lb. air

Source: VAN PRODUCTS CO.
3783 W. 12th St., Dept. IEN, Erie, Pa.



Foot valve controlled

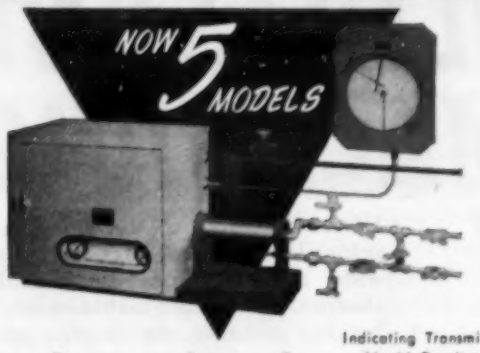
Power movement is through 6 in. on this new air-operated vise. The vise opens to 11 in. and will hold work to 6 in. in diameter between its V-type jaws located beneath the square jaws. Mounting is on a swivel base. Jaw width at the top is 6 inches. Vi-Speed is the trade name.

The Vee-jaws for pipe can be removed for replacement with other types of holding fixtures. An adjusting screw on the 8-in. cylinder permits limiting the stroke to a desired maximum amount. Pressure ratio is 50 to 1.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7933

LIQUID GRAVITOMETER



Indicating Transmitting Liquid Gravitometer

. . . for pipelines, gasoline and chemical plants, refineries, etc.

Ruggedly built for hard field use but with laboratory accuracy, the long accepted ARCCO-Anubis Liquid Gravitometer with all its splendid features is now available for recording, controlling, indicating, transmitting, or various combinations of these functions. Write us fully about your application and request Bulletin No. 111 Revised.

1. RECORDING LIQUID.
2. INDICATING TRANSMITTING.
3. INDICATING CONTROLLING.
4. RECORDING TRANSMITTING.
5. RECORDING CONTROLLING.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

If you write maker identify as IEN - 7934

FILTERING . . Liquid clarifier available to order for specified use

Source: INDUSTRIAL FILTRATION CO.
Dept. IEN, Lebanon, Ind.

Bulletin, "Settling and Filter System"

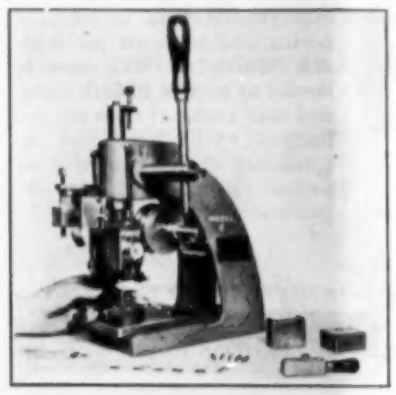
Liquids, such as coolants and lubricants or process fluids, and entrained chips, solids, flow into one end of this new screen equipped settling tank. The screen is located at the end opposite to the inlet and is made of parallel V-section wires or bars with slot openings measuring 0.004 in. or more. Between the screen and the inlet is a brush equipped chain flight conveyor. It is motor driven to travel slowly down the face of the screen and along the tank bottom to a discharge over the end of the tank where the inlet is located.

Solids, that accumulate on the screen and on the tank bottom, are gathered and discharged over the tank end. Liquid, that passes through the screen, leaves the assembly at a pipe connection beyond the screen for return to a circulating line or to a process outlet. Settling action in the tank between the inlet and the screen minimizes the filtering load.

If you write maker identify as IEN - 7935

MARKING . . Color foil machine applies heat and pressure on the work

Source: ACROMARK COMPANY
7 Morrell St., Dept. IEN, Elizabeth, N. J.



Mounts on bench

Model E designates a new machine for hand application of pressure, combined with electrically supplied heat, to mark work pieces with color leaf foil. Names, addresses, sizes, job numbers, grades, quality designations can be applied on undercut, channel type, ring type parts, as well as on flat work surfaces. An opening in the back of the machine permits the work to be run through in a left to right or back to front movement so the machine is suited for marking insulated cable, belting, plastic strip, painted metal strip, webbing.

A holder is provided for the type with an interchangeable type chase to set up desired lettering or numbering or to secure trade marks and trade name stamps. Heat is supplied by a sealed tubular cartridge element fitted into the head and operating in connection with an enclosed dial thermometer. The leaf foil feeds from a roll.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7936

LOT LABELLING

Eliminate Shipping Labels . . . Print Direct!

Quick! Accurate! Easy! Print shipping information direct on cartons, boxes, packages. Eliminate double operation of preparing labels and then pasting them to the containers. Get 1,000 or more clear, sharp, impressions from one stencil without re-inking. New FORM-CUT® Stencil has facsimile of your label or shipping form die-impressed into the stencil . . . then type or write in address or identification data . . . attach to duplicator . . . and print, like using a rubber stamp. Write for Literature and FREE SAMPLE FORM-CUT STENCIL AND PRINT.

THE ORIGINAL HAND STAMP STENCIL DUPLICATOR

Also for addressing shipping tags and labels . . . quotes postcards, menus, forms, bulletins. 8 complete outfits, $9.95 to $99.50, including supplies (f. o. b. factory). At office or shipping room supply dealers.

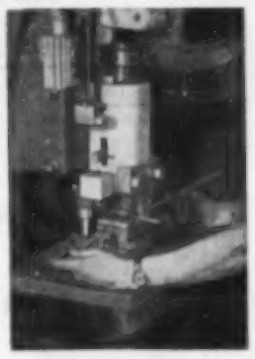
OVER 30 YEARS

MULTISTAMP STENCIL DUPLICATOR
MANUFACTURED ONLY BY THE MULTISTAMP CO.

If you write maker identify as IEN - 7937

Adjustable Automatic Stock FEED STOP for DIES

Dahlstrom Light Duty **AUTOSTOP**



No drill jig . . .
No slotting . . .
No milling . . .

$1.75

Tested and improved through the years, the Dahlstrom Autostop will save hours of your high priced labor. Adjustable to work with blanking, progressive and compound dies. Mounts on stripper plate in 15 minutes. Handles sheet steel up to 1/16" x 6" or equivalent weight.

TO INSTALL: Just drill one 7/32-inch hole, then drill and tap four mounting holes per directions. That's all there is to it!

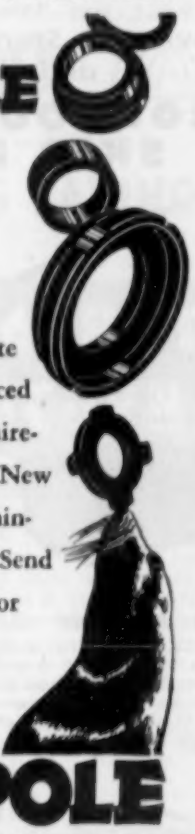
Trial order $1.75 each; lots of 12 $1.50 each. State whether for use on compound or progressive dies. *Write for free pamphlet.*

By the makers of the DAHLSTROM TAP GUIDE

Branch MANUFACTURING COMPANY
NORTH BRANCH • MINNESOTA

If you write maker identify as IEN - 7938

STACKPOLE *Seal* RINGS

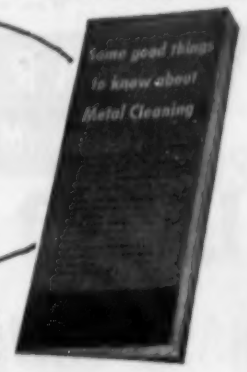


Molded from carbon-graphite materials specifically balanced to match your specific requirements. All shapes and sizes. New oil seal grades that greatly minimize pitting and blistering. Send details of your application for recommendation by Stackpole engineers.

STACKPOLE
STACKPOLE CARBON COMPANY, *St. Marys, Pa.*
"EVERYTHING IN CARBON BUT DIAMONDS!"

If you write maker identify as IEN - 7939

WHICH JOB WOULD YOU LIKE TO IMPROVE?



Listed below are some of the jobs discussed in Oakite's 44-page illustrated booklet on Metal Cleaning. Let us help you do them with better results, greater economy.

OAKITE PRODUCTS, INC., 16A Rector St., New York 6, N. Y.

Tell me about Oakite methods for the following jobs:

- ☐ Tank cleaning
- ☐ Machine cleaning
- ☐ Electrocleaning
- ☐ Pickling
- ☐ Pre-paint treatment
- ☐ Zinc phosphate coating
- ☐ Paint stripping
- ☐ Steam-detergent cleaning
- ☐ Burnishing, barrel cleaning
- ☐ Rust prevention
- ☐ ALSO send me a FREE copy of your booklet *"Some good things to know about Metal Cleaning"*

NAME _____
COMPANY _____
ADDRESS _____

Technical Service Representatives in Principal Cities of U. S. and Canada

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

If you write maker identify as IEN - 7940

THIS BOOKLET CAN OPEN A DOOR FOR YOU!

...a door to faster production—easier fabrication—cost savings in your plant. This informative, fully illustrated booklet describes the whole range of Tufflex cellulose felted fibers for cushioning—protective padding—sound absorption—thermal insulation—and many other uses. It tells why Tufflex, available in many different types—is finding new jobs every day in American industry. Send now for your free copy of "The Expanding Miracle of Tufflex"—there's no obligation. Wood Conversion Company, Dept. 126-74 First National Bank Building, St. Paul 1, Minnesota.

KEEP YOUR EYES ON TUFFLEX*

Guaranteed by Good Housekeeping

*Reg. U. S. Pat. Off.

If you write maker identify as IEN - 7941

Moving or Storing is Rapid, Convenient and Inexpensive with

IRONBOUND SEMI-LIVE SKID PLATFORMS

Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.

SEMI-LIVE SKID WITH BOX TOP

. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 7942

LEARN ABOUT THE MANY WAYS—

LESTO *Electric* HAND SAW

CAN MAKE MONEY FOR YOU

Cuts inside holes without drilling a starting hole.

RIP, JIG, SCROLL, CROSSCUT, BAND, COPING, KEYHOLE

If your plant is large or small you'll benefit many ways with this versatile, practical "speed-up" tool for wood, metal, plastic, cement, etc. It turns out more work in less time! It turns out cleaner work with less effort! You stand to gain by spending a few minutes reading about LESTO.

Sold and Serviced in Principal Cities Throughout U.S.A.

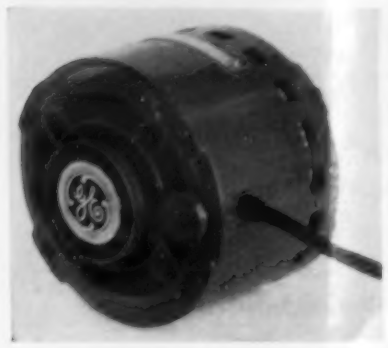
VICTOR J. KRIEG, Inc.
Dept. A, 611 Broadway
New York 12, N. Y.
GRamercy 7-5757

VICTOR J. KRIEG, INC.
Dept. A, 611 Broadway
New York 12, N. Y.
Gentlemen:
Please send full details on LESTO Electric Hand Saw.
Name _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 7943

MOTOR . . Shaded pole design for fans and blowers, 1/12 to 1/6 hp.

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



For continuous duty

Type KSP-39 designates a new shaded pole motor with a housing that measures 5½ in. in diameter. The new unit is available in four ratings between 1/12 and 1/6 hp. for general fan and blower applications such as room air conditioners, furnace fans, unit heaters and coolers, window fans. The motor supplements the previously developed smaller shaded pole units in ratings from 1.5 watt to 1/10 hp. It is available with internal baffling, single and double shaft assembly, resilient base, cushion ring or shaft end mounting.

If you write maker identify as IEN - 7944

PROTECTING . . Visor goggle stops flying particles, splashes, glare

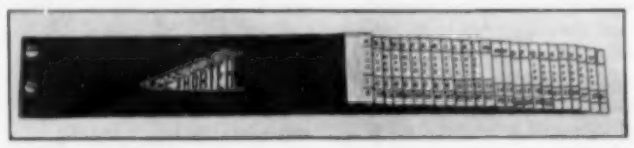
Source: MINE SAFETY APPLIANCES CO.
201 N. Braddock Ave., Dept. IEN, Pittsburgh 8, Pa.

Bulletin 0301-3

Plastic lens, available in clear, light green, medium green or dark green color, is interchangeably assembled with an opaque green visor in this new unit. The visor can be supplied perforated for open type ventilation or double ported and screened for indirect ventilation. The lens is curved to protect in both front and side areas. It does not interfere with spectacles. A cover lens can be employed to protect the main lens. An adjustable head band completes the assembly.

If you write maker identify as IEN - 7945

Place this new Sorter on the desk in front of you and slip your letters, data sheets, cards into their correct slots by



alphabet, month, number. Very shortly you will have your sorting job completed. It takes standard sheets to 8½ in. in width in the top slot. Recordplate Company, 16 E. Holly St., Dept. IEN, Pasadena 1, Calif., manufactures it. List is about $6 for the new unit.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7946

MAKE YOUR OWN TOUGH DRAWING-BOARD TEST!

Send for this FREE sample kit

GHOST-PROOF

ELLCO-VEL®
TRACING PAPER

You can erase and erase this blue-tint as many as 5 or 6 times after repencilling. Pencil lines vanish completely and thoroughly. Not even the shadow of a ghost shows on white or blue prints. It's Ghost-Proof! But find out for yourself. Send for tough, durable ELLCO-VEL samples now.

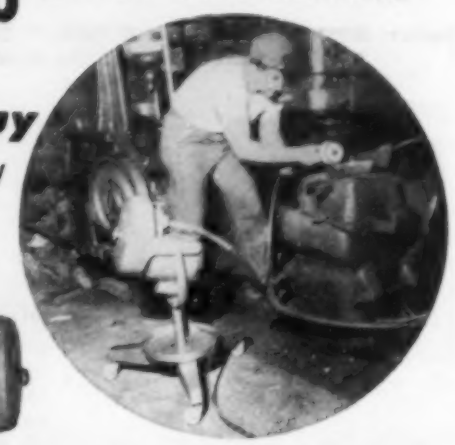
B. K. ELLIOTT CO.
PITTSBURGH • DETROIT • CLEVELAND

WRITE DEPT. 71E • 126 SIXTH ST. • PITTSBURGH 22, PA.

If you write maker identify as IEN - 7947

STOW flexible shaft machines

your best buy because they serve your customers better



Versatile . . . choice of operating speeds . . . specially designed to provide *highest efficiency!* Constant speed and other variable speed models also available.

For over 75 years, STOW FLEXIBLE SHAFT MACHINES have been famous for long trouble-free performance.

STOW

Don't delay—write *today* for your free copy of CATALOG #51.

STOW MANUFACTURING CO. 25 Shear St., Binghamton, N.Y.

If you write maker identify as IEN - 7948

MAKE ALL FLOORS

METAL, CONCRETE, AND WOOD

SLIP-PROOF

WET OR DRY

USE **R-MIR-DEK**

NON-SLIP COATING

FOR ALL FLOORS, STAIRS, RAMPS, AREAS AROUND MACHINERY AND LOADING PLATFORMS.

R-MIR-DEK NON-SLIP COATING is the only lightweight safety floor coating that is fire retardant, anti-corrosive, easily applied, and oil, grease, alkali, and acid-resistant. Compounded of durable phenolic resins and polymerized oils with everlasting aluminum oxide granules added. Available in white, olive drab, red, light and dark grey, sea grey, brown, regular and navy blue, black, and green.

FREE! 2-color R-Mir-Dek illustrated brochure describes this lightweight, safety floor coating. Write to Dept. IEN-7.

MIRACLE ADHESIVES CORPORATION
214 East 53rd Street, New York 22, N. Y.

If you write maker identify as IEN - 7949

What can you do with

ULTRASONIC MACHINING?

Ultrasonic Abrasive Machining, as developed by Raytheon, has already found wide application in such fields as sharpening tungsten carbide tools, chip breaker grinding, die shaping and finishing. It also provides a practical means of slicing, trepanning, forming or cutting shaped holes in tungsten carbide, ceramics, glass, quartz, and other hard or brittle materials. It may be just the process you need to solve a production problem.

LOOK INTO IT TODAY

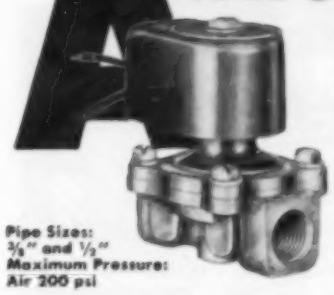
Write for descriptive bulletin and information on the application of *Ultrasonic Machining* to your problem. Please specify material to be worked and describe operation.

Address Inquiries to Dept. 6270 IN

RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago
New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 589 FIFTH AVENUE, NEW YORK CITY

If you write maker identify as IEN - 7950

Announcing



NEW ASCO®
2-Way Solenoid Valve
for controlling the flow of Air, Gas, Light Oil, Water, Brine, Freon, Methyl Chloride, etc.

BULLETIN 8210-A
SOLENOID VALVE
(about 2/5 actual size)
Normally Open and
Normally Closed Types Available

The most important development in years in compact design for 2-Way Solenoid Valves

Pipe Sizes: 3/8" and 1/2"
Maximum Pressure: Air 200 psi

featured by

- **Simplicity** — two operating parts: flexible diaphragm and stainless steel core
- **Long Life** — millions of maintenance-free operations
- **Forged Brass Body and Bonnet** — insure freedom from porosity
- **Corrosion-Resistance**—contact parts, brass or stainless steel; Hycar diaphragm
- **Low Power Consumption** — only 10 watts
- **Solenoid Enclosures** — NEMA I Standard or NEMA VII Explosion-Proof

WRITE FOR COMPLETE INFORMATION!

We design and manufacture a complete line of Solenoid Valves and Electromagnetic Controls including Automatic Transfer Switches, Remote Control Switches, Contactors, Relays, and Complete Control Panels.

Experience Shows "There's an ASCO Valve for Every Problem"

V 54 6c

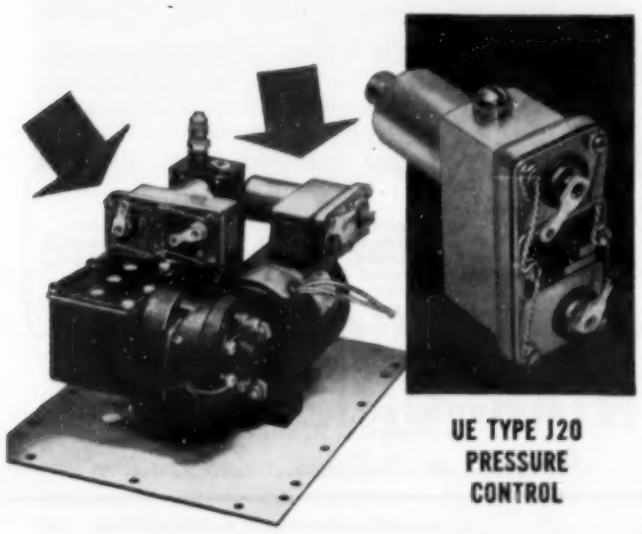
ASCO Solenoid VALVES

Automatic Switch Co.
383 LAKESIDE AVENUE • ORANGE, NEW JERSEY

If you write maker identify as IEN - 7951

UE PRESSURE CONTROLS MAINTAIN SET PRESSURES

IN THE STRATOSPHERE



UE TYPE J20 PRESSURE CONTROL

The electronic equipment in today's high-flying aircraft requires uniform pressure conditions at predetermined levels in order to function accurately. At current operating altitudes, this pressure is supplied by pressurization units made by Eastern Industries, Inc. — and maintained by *UE* Type J20 controls.

The pressurization unit maintains a constant pressure at all times, between predetermined settings, thus assuring reliable performance of the plane's electronic equipment. The *UE* Type J20 Pressure Control automatically cuts the pressurization unit's motor in and out at those predetermined settings — thus assuring optimum electronic performance.

UE Type J20 — now offered commercially for the first time — is also being used in pressurized coaxial cables, R. C. A. ground radar, and in maintaining frequency bands.

United Electric manufactures a wide line of standard controls that are used in aircraft fuel purging systems, paper mill machinery, diesel engines, milk pasteurizers, room air conditioners and in countless other applications.

Special controls can be adapted from standard models, or can be custom built by United engineers working in cooperation with your own product development engineers.

Write today for information on the complete line of United Electric Controls.

Standard and special thermostats and pressure switches

UNITED ELECTRIC CONTROLS CO.
80 School Street, Watertown, Mass.

If you write maker identify as IEN - 7953

TRUCK . . Engine driven fork lift pneumatic or solid tires, 1 to 2 ton

Source: YALE & TOWNE MFG. CO.
11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.

Compact design

Series G-52 designates a new line of three engine driven trucks rating 1, 1½ and 2 ton respectively. They have been designed to minimize truck size for given load capacity. All three employ fluid couplings, hypoid gear drive, hydraulic brakes inside the wheels and a hand operated parking brake that connects through mechanical linkage to the hydraulic brakes.

The 2-ton unit employs a 25-hp. engine, has an overall length of 72 in. and an overall width of 32½ inches. It can be turned in 57-in. intersecting aisles and can right angle stack in a 112-in. aisle. Uprights are 68, 83 or 90 in. in height in lowered position. Hydraulic pressure provides lift and tilt action on the forks.

Controls center at levers on the steering column for selection of reverse and forward movement and for either of two speeds in either direction. Speed is controlled by a governor for top operation at 8 miles per hour. Lift, lower and tilt actions are controlled at levers beside the driver's adjustable seat. Free lift speed is 55 fpm. and rated load speed is 50 fpm. Lowering speed ranges from 65 fpm. free to 75 fpm. loaded.

The elevating carriage and the telescoping channels are mounted on heavy duty rollers equipped with sealed ball bearings. Off center loading thrust is taken by four rollers on the fork carriage that bear against both sides of a single channel. Maximum lift of 144 in. is available when the lift is telescopic design.

If you write maker identify as IEN - 7954

HOIST . . Safety load hook can be specified for Coffing hoists

Source: COFFING HOIST CO.
800 Walter St., Dept. IEN, Danville, Ill.

Bulletin SH3-54

Safe operation is assured for both workers and hoisting equipment by this new safety load hook. As soon as the hook is engaged, a steel latch swings down and is held in place by a lock under spring tension. The latch cannot move sideways because it fits over the hook point. Light pressure on the release unlocks the latch and spring tension on the release holds the latch open. The latch is designed so it will shed wires and other objects instead of snagging them.

The hook is made of drop forged heat treated steel with cadmium plated finish. List price is $3.75. It is known as Model A-3-SH. Throat opening is 1⅛ inches. Maximum shank diameter is ⅝ inches. When ordered as initial equipment, on Coffing hoists using the A-3 series hooks, the additional list is $3 per hoist for both hooks or $1.50 for one hook.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7955

NOW AUTOMATIC Hole DEBURRING

with NOBURMATIC TOOL

New Noburmatics deburr and chamfer front and inaccessible back hole faces in ferrous and non-ferrous sheets, plates, extrusions, castings and forgings *in one automatic operation*. Used in drill motors or stationary machine tools, Noburmatics produce uniform deburring with high accuracy, increase production line speed. Made in all drill sizes from ⅛" (.125) to F(.256).

Entry Noburmatic enters hole, advances to limit stop, DEBURRS FRONT FACE. (Rear cutter now projects.)

Withdrawal BACK FACE DEBURRED. Cutter automatically retracts. Tool ready for next cycle.

For Free Bulletin and Full Details, Write Today!

NOBUR MANUFACTURING COMPANY
717 N. VICTORY BLVD., BURBANK, CALIF.

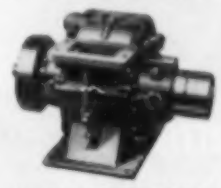
If you write maker identify as IEN - 7956

STURTEVANT Laboratory Equipment . . .

assures accurate samples . . . cuts laboratory sampling costs

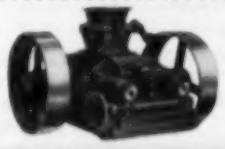
Sturtevant laboratory equipment have all the features of full-sized production machines with extra accuracy and wider range of adjustment built-in. They are fast . . . provide true samples of every batch processed.

Investigate Sturtevant equipment for your laboratories. They will help you cut sampling costs . . . improve product quality . . . increase sales. Write for catalog, today.



LABORATORY SWING-SLEDGE MILLS
Capable of reducing soft, moderately hard and tough or fibrous materials to any degree of fineness between 1 in. and 20 mesh. The patented "Open-Door" feature permits ready accessibility for cleaning.

LABORATORY CRUSHING ROLLS
First designed especially for laboratory sampling work, Sturtevant Crushing Rolls are used regularly in many plants where there are limited out-puts. Range of output for the 8 x 5 size is from ⅛ in. to 20 mesh — and for the 12 x 12 size from ¾ in. to 20 mesh.



LABORATORY JAW CRUSHERS
Special Roll Jaw action simplifies close regulation of the product with capacities varying from 300 to 400 lbs. per hour at finest settings, to 1000 or 2000 lbs. when opened for coarser work. Each part of the crusher is accessible for quick and easy cleaning.

LABORATORY SAMPLE GRINDER
Laboratory Sample Grinders are of the "Open-Door" disc type and are capable of very fine work, producing products as fine as 100 mesh (coarser if desired) when working on dry, friable, soft or moderately hard materials. Simply turn hand wheel to provide product regulation from 10 to 100 mesh.

Sturtevant Mill Company, 113 Clayton St., Boston 22, Mass.

If you write maker identify as IEN - 7957

Dress up your product **Assure tight assemblies**

—and get

BIG SAVINGS *with*

PALNUT ACORN LOCK NUTS

- **Cost much less than ordinary acorn or cap nuts.**
- **Spring steel locking action holds tight under vibration.**
- **Pleasing appearance—covers rough bolt ends.**
- **Protects users against scratches and catching.**

SAVE MONEY and get a secure, streamlined fastening on light assemblies, by using low-cost PALNUT Acorn Lock Nuts. Double-locking spring action resists severest vibration. Easily, speedily applied with hand or power tools. Also used on top of ordinary nuts to cover bolt ends and lock heavy assemblies.

Full range of popular thread sizes, in cadmium, nickel, chrome or other finishes to order

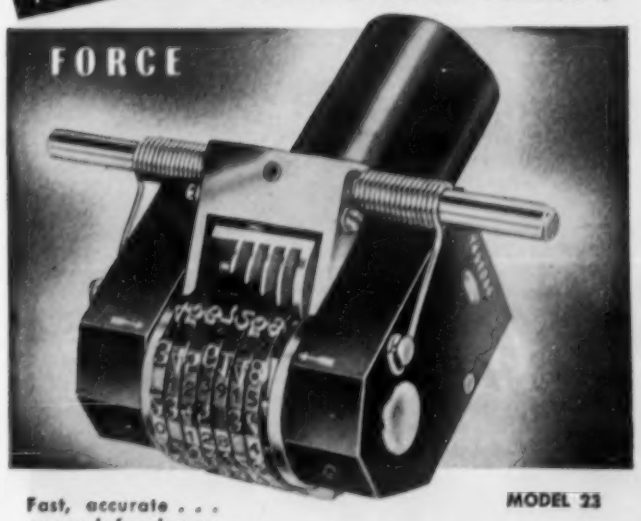
Send for literature and free samples, stating size and finish.

The Palnut Co., 59 Cordier St., Irvington 11, N. J.
In Canada: P. L. Robertson Mfg. Co., Ltd., Milton, Ontario

If you write maker identify as IEN - 7958

NUMBERING IN METAL

indenting NUMBERING HEADS



Fast, accurate . . . rugged for heavy power press use. Figures from 1/64" to 3/8" or larger as required.

MODEL 23

Write for prices and catalog of all models.

WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N. Y.

If you write maker identify as IEN - 7959

DIRT'S NO PROBLEM for the SKF "SAF" Pillow Block

The "SAF" Pillow Block is SKF's answer to dirt problems:

- triple-seal rings give three-fold protection in dirt-gathering locations; seal out foreign matter; seal in oil or grease; self-aligning.
- special stabilizing rings between housing shoulder insure fixed position of shaft in bearing during operation.
- types for light, normal and heavy duty.

Write SKF Industries, for complete details, or contact your SKF Distributor. SKF INDUSTRIES, INC., PHILADELPHIA 32, PA. —*manufacturers of* SKF *and* HESS-BRIGHT *bearings.*

SKF BALL AND ROLLER BEARINGS

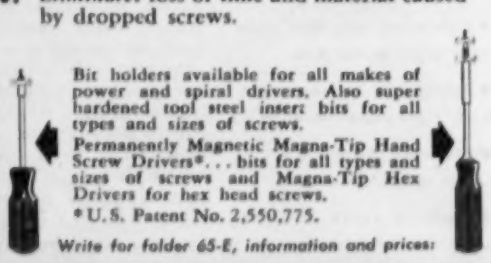
IN EVERY INDUSTRY, SKF Puts The Right Bearing In The Right Place

If you write maker identify as IEN - 7960

Thousands of these MAGNA BIT HOLDERS* cut costs 4 ways

FOR POWER AND SPIRAL SCREWDRIVERS

1. *Cuts labor costs.* No hand starting, no pre-positioning of screws. Bit holds screw *firmly.* High energy *permanent* magnet energizes bit with 10 times ordinary "pull".
2. *Cuts bit costs* through use of long-wearing super hard, low-cost interchangeable insert bits.
3. *Cuts bit wear* and replacement since the energized bit seats itself positively in the screw slot or recess.
4. *Eliminates* loss of time and material caused by dropped screws.



Bit holders available for all makes of power and spiral drivers. Also super hardened tool steel insert bits for all types and sizes of screws.

Permanently Magnetic Magna-Tip Hand Screw Drivers*... bits for all types and sizes of screws and Magna-Tip Hex Drivers for hex head screws.

*U.S. Patent No. 2,550,775.

Write for folder 65-E, information and prices:

MAGNA DRIVER CORP.
779 WASHINGTON STREET, BUFFALO 3, N.Y.

If you write maker identify as IEN - 7961

Wheeler LIGHTING FIXTURES

A BASIC PRODUCTION TOOL OF AMERICA'S LEADING INDUSTRIES

In industry after industry . . . where modern progressive thinking rules . . . Wheeler Lighting Fixtures are the logical choice for maximum lighting efficiency!

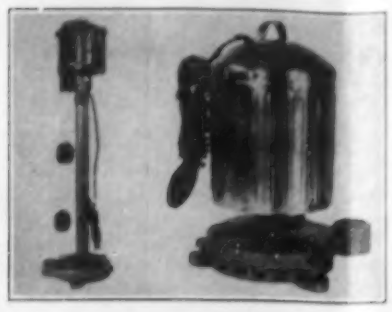
WHEELER REFLECTOR COMPANY
275 CONGRESS STREET, BOSTON 10, MASS.

DISTRIBUTED EXCLUSIVELY THROUGH ELECTRICAL WHOLESALERS

If you write maker identify as IEN - 7962

PUMP . . Motor driven turbine for sump duty rates 62 gpm. at 6 feet

Source: AURORA PUMP CO.
Loucks St., Dept. IEN, Aurora, Ill.



For pits, basements

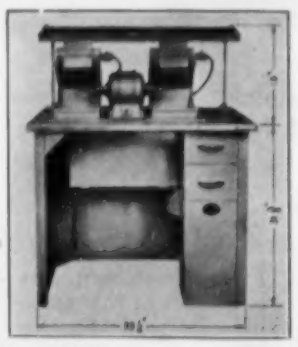
Two assemblies are available in a new line of turbine type pumps for sump duty. Type DSM, to the left in the illustration, mounts its motor at the upper end of a connecting tube. Its action is controlled by non-corrosive displacer bobs that are adjustable on a stainless steel wire. The pump assembly and the support column are made of bronze. The shaft is stainless steel. Type DDS, to the right is a totally submersible unit with the pump enclosed in a stainless steel shell that serves also as the adjustable float control.

Both pumps employ bottom suction and mount semi-open non-clogging impellers which deliver to a 1¼-in. pipe threaded vertical discharge. The motor rates ¼ hp. for operation on 110-volt 60-cycle single-phase ac. Capacity is 1½ to 62 gpm. with heads at 24 to 6 feet.

If you write maker identify as IEN - 7963

GRINDING . . Bench mounted machine with hoods and built in dust collector

Source: LEIMAN BROS. INCORPORATED
102 Christie St., Dept. IEN, Newark 5, N. J.



Clean operation

Model L-120 is a new assembly of ¼-hp. grinding machine and a work bench equipped with drawers, a shelf, two suction hoods and an exhaust blower driven by a ¼-hp. motor. The bench occupies 36 by 19 in. of floor space. Overall height is about 47 inches. Lights are assembled in protected position on the two exhaust hoods above the machine spindles that extend from the centrally located grinder motor. The machine has been designed particularly for light precision work in which the operator works seated at the front.

If you write maker identify as IEN - 7964

Digital printer takes signals from Baldwin-SR-4 resistance wire strain gages and prints force, weight, pressure, torque on continuous tape, tickets or sheets to 8½ by 11 inches. The printing can be actuated manually or automatically at a preset interval. The new printer can be employed in industrial weighing or in making laboratory records of load and pressure measurements in connection with load or pressure cells. The records do not require trained personnel to read them. Baldwin-Lima-Hamilton Corp., Paschall Post Office, Dept. IEN, Philadelphia 42, Penna., is manufacturing the equipment.

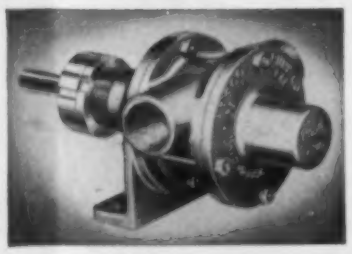
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7965

A PAID NEWS ADVERTISEMENT BY JABSCO PUMP COMPANY

JABSCO STAINLESS STEEL PUMPS SOLVE CORROSIVE PUMPING PROBLEMS

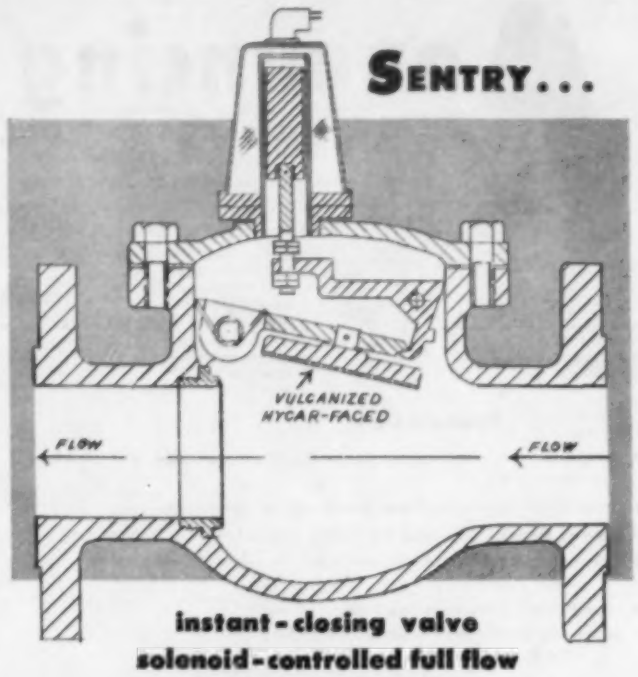
Designed and Engineered for Chemical Applications



Jabsco's complete line of self-priming, corrosion-resistant pumps answer a multitude of pumping needs. Models 2810 (1" pipe size), 2870 (½"), and 2690 (⅜") have all metallic parts of Type 316 stainless steel. Shafts are supported by oversize, replaceable carbon bearings, stuffing box type shaft seal with chemical resistant packing. Pumps function perfectly even with dry suction lifts approaching 15', no foot valve is required. When primed, they suck as high as 26'. Jabsco pumps have no metal-to-metal contact, no gears to wear or become noisy. The exclusive "camflexed" Neoprene Impeller is the only moving part. This tough, long-lived, wear resistant impeller is self-lubricated by the liquid pumped. Jabscos are economical, low in first cost, and trouble and maintenance free, even under continuous operation. May be mounted at any angle to pump thin or viscous liquids, and can be operated efficiently at low or high speeds. At 10' head and 1750 RPM, Model 2810 delivers up to 27 GPM, Model 2870 up to 10 GPM, Model 2690 up to 4 GPM. Other stainless steel models also available with ball bearings and mechanical seals. For complete information on how Jabsco can solve your pumping problems, write **Jabsco Pump Company**, 2031 North Lincoln Street, Burbank, California.

If you write maker identify as IEN - 7966

SENTRY . . .

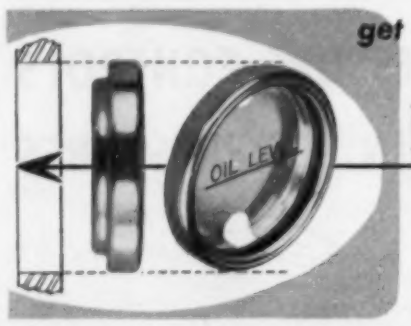


instant-closing valve solenoid-controlled full flow . . . absolute closure when power failure occurs.

- manual resetting. Explosion-proof U. L. approved solenoid housing.

McRAE CORPORATION
621 So. Spring St., Los Angeles 14, California

If you write maker identify as IEN 7967



get the inside story with BIJUR WINDOW UNITS

Economical in lots of 1000 or more.

They give maximum visibility for observing liquid level, gas activity or internal moving parts of machines.

The construction of these window units consists of a one piece chromium plated shell holding a clear, hard, unbreakable plastic window with a permanent oil-proof gasket.

Quick, easy, low-cost installation – press-fits tightly into reamed hole giving flush-mounting that preserves the clean lines of a machine – No tapping, loose parts, screws, gaskets or extra assembly operations.

AVAILABLE IN FOUR SIZES AND THREE TYPES ⅝", 1", 1-¼" and 1-¾".

STANDARD	LEVEL	OPEN
With reflecting background providing high visibility of liquid level.	Same as standard with a black "Oil level" line inscribed to indicate required liquid level.	Affords clear view of internal moving parts, flow of liquids or gases, or indicating dials.

Write for Bulletin 4D

BIJUR LUBRICATING CORPORATION
Rochelle Park, New Jersey

Pioneers in Automatic Lubrication

If you write maker identify as IEN - 7968

A "PEN" MICROSCOPE at work in quality control at Bridgeport-Lycoming

Quality control work at the Bridgeport-Lycoming Division of Avco, manufacturers of aircraft engines and jet engine components, is one of the many applications which leading industrial companies have found for the Pike Model V "Pen" Microscope — the instrument that's no larger than a fountain pen — yet gives magnifications of 40x, 50x or 60x. Ruggedly made and easy to use — yet built with the optical precision of a laboratory microscope.

Ideal for on-the-spot examination of specimens — eliminates time-consuming techniques. Self-illuminating by means of mirror that reflects external light source. Price $15.75.

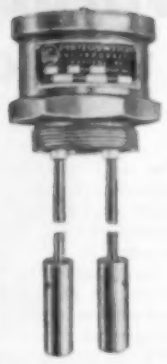
Write for literature on Pike "Pen" Microscopes and FLASH-O-LENS models combining magnifiers and self-contained light sources

E. W. PIKE & COMPANY
492 NORTH AVENUE ELIZABETH 3, NEW JERSEY

If you write maker identify as IEN - 7969

NEW!

ELECTRONIC LEVEL CONTROL



- precisely accurate
- unlimited life
- maintenance free

New Photoswitch Level Control Type 13DJ3 reaches a new high in performance . . . controls all electrically conductive liquids. No floats, no moving parts to wear or fail in service. Responds instantly to liquid touching probes . . . will sound alarm, start and stop pumps. Accuracy unaffected by temperature or pressure.

Corrosion-resistant stainless steel probes reach into tank to levels at which pumping operations are required. Contact of liquid with the probes operates Photoswitch Level Control which makes and breaks the pump control circuit.

Low current, low voltage in probe circuit for safety in explosive atmospheres. Operates from 115 or 230 volt 50/60 cycle supply.

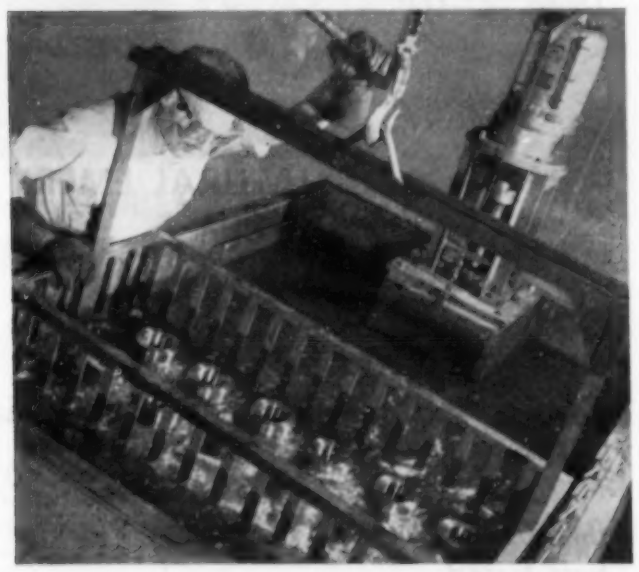
Write today for Bulletin PF-544

Photoswitch Incorporated

Dept. P7-7, 77 Broadway, Cambridge 42, Mass.

Offices in all principal cities.

If you write maker identify as IEN - 7970



Build it yourself . . .

ONE-MINUTE DEGREASING BATH

Try this speedy new *low-cost* way to clean and degrease castings, gears, small parts.

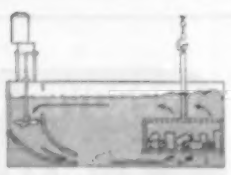
Just lower pieces to be cleaned or degreased into the solvent tank. The LIGHTNIN Mixer does the work—whisks solvent through and around parts. Cleans them slick as a whistle—in *one minute*. Twice as fast as hand dipping, and much cheaper.

All you need is your own shallow tank for solvent, fitted with a LIGHTNIN Mixer, easily installed per drawings we furnish you.

Fully guaranteed to do the job efficiently, or your money back.

Send today for illustrated LIGHTNIN Catalog B-103 and prices.

You take no risk when you specify LIGHTNIN Mixers for any fluid mixing operation in your plant. Thousands of LIGHTNINS are in use everywhere. Many in service 20 years and more.



GREASE OFF in 60 seconds. Solvent rushes through and around parts, driven by LIGHTNIN Mixer. Flow is controlled by simple baffle plates in tank.

MIX FLUIDS FAST in any open tank or container, with a LIGHTNIN Portable Mixer. Thirty models, ⅙ to 3 HP. Send for Catalog B-108.

FOR BIG MIXING JOBS . . . turbine and paddle mixers for open or closed tanks. Sizes 1 to 500 HP. Send for Catalog B-102.

Lightnin® Mixers

MIXING EQUIPMENT Co., Inc.

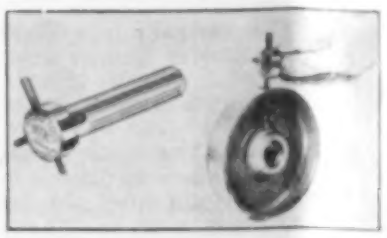
124-g Mt. Read Blvd., Rochester 11, N. Y.

In Canada: William & J. G. Greey, Ltd., 100 Miranda Avenue, Toronto 10, Ont.

If you write maker identify as IEN - 7972

WRENCH . . Die cast holder and bits to turn socket head screws

Source: MICRO TOOL CO.
10 Sigourney St., Dept. IEN, Hartford 5, Conn.



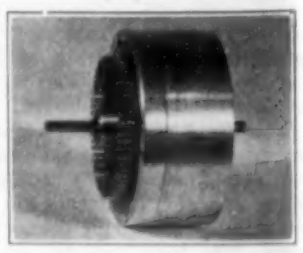
Good for servicing

Illustrated is one of three new die cast holders. It takes four progressive sizes of socket head wrench bits from ⅛ to $\frac{5}{32}$ in. to fit 18 sizes of socket head screws. The holder secures the bits with a snap-on cap. It provides a firm hand hold with which the correct size of bit can be entered and applied to tighten or loosen a socket head screw. Extension bits can be employed to reach into difficult locations. The other two holders, to be added to the line shortly, will take bits measuring 0.05 to $\frac{5}{32}$ in. and ¼ to $\frac{7}{16}$ inch.

If you write maker identify as IEN - 7973

SWITCH . . Multiple contact design to specification, hand or motor drive

Source: GENERAL DEVICES INC.
Box 253, Dept. IEN, Princeton, N. J.



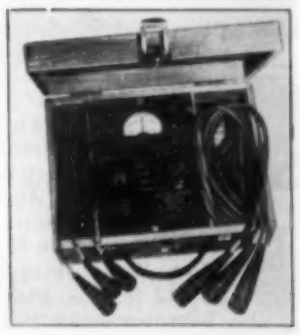
Built to order

Illustrated is a typical example in a new line of commutator type switch assemblies now available to specification. The unit shown measures 2 in. in diameter and is 1 in. in housing length. The central operating shaft can be arranged for hand or motor operation and can extend from one or both sides. Representative applications include thermocouple and strain gage sampling, drift correction for multiple amplifiers.

If you write maker identify as IEN - 7974

TESTING . . Phase sequence indicator for use on 3 phase circuits and motors

Source: JAMES G. BIDDLE COMPANY
1316 Arch St., Dept. IEN, Philadelphia 7, Pa.



Bulletin 80-19

Three line and three motor leads connect into this new sequence tester. It can be applied on a 3-phase circuit of unknown phase rotation and on a motor to predetermine the direction of rotation prior to connecting it into the line. A selector switch is turned for readings on both the line and the motor. Assembly is in an oak housing. Weight is 10 pounds. Compartments on the two sides provide space to carry the leads.

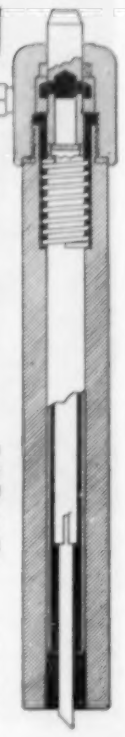
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 7975

Here are the 7 "MUSTS" in selecting....

RESISTANCE WELDING HOLDERS

1. Leak-proof, positive Water Flow
2. High Conductivity
3. Simplicity of Design
4. Simple Maintenance
5. 100% Rust-Proof Construction
6. Rugged . . . Long-Lived
7. Non-Magnetic Throughout



specify....

WW® ELECTRODE HOLDERS

on all counts....THE BEST!

Yes, WW Alloys, Inc., Electrode Holders have proved time and time again to be the closest thing to an absolutely trouble-free resistance welding holder. They continue to set new records of performance . . . the most severe conditions in resistance welding don't faze them even after thousands of hours of trouble-free service. They're designed and built for the type of rugged duty you want them to perform. Learn more about these remarkable resistance welding holders.

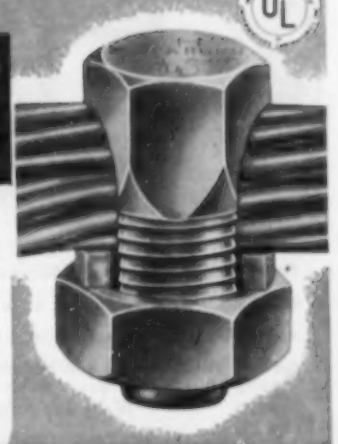
Send for free booklet of latest information on Resistance Welding.

WW ALLOYS, INC.
Division of Fansteel Metallurgical Corporation
11644 Cloverdale Avenue, Detroit 4, Michigan

If you write maker identify as IEN - 7976

Make BETTER CONNECTIONS with HIGH PRESSURE!

BLACKBURN *Hi-Strength* CONNECTORS

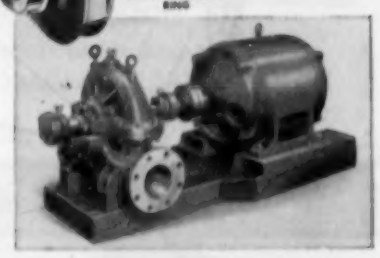


Avoid "loose joint" trouble and the cost of running it down; use BLACKBURN Hi-Strength Connectors! Tests show that they definitely produce higher pressure connections — *trouble-free* connections. It costs less to use the best — use BLACKBURN. UL Approved from No. 10 to 1,000,000 CM.

JASPER BLACKBURN CORPORATION
33 MADISON ST., ST. LOUIS 6, MO.
Phone CEntral 3007

If you write maker identify as IEN - 7977

INSIDE STORY OF A BETTER PUMPING VALUE



IMPELLER AND SHAFT ASSEMBLY OF A "BUFFALO" DOUBLE SUCTION PUMP

Take a look at the "heart" of a clear water pump built for performance and endurance! Note the full ball bearing support on both ends of the oversize shaft; the sturdy, high-efficiency enclosed impeller (water enters *both* sides in *equal* volume and pressure for maximum delivery). Simply formed passages in the casing, too, minimize friction. Coupling is Buffalo pin and rubber bushing type — Self-aligning. WRITE FOR BULLETIN 955-Q for further details on your best buy for moving clear water in 10 to 14,000 gpm capacities!

BUFFALO PUMPS, INC.
496 Broadway Buffalo, New York
Subsidiary of Buffalo Forge Company
Canadian Pumps Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

If you write maker identify as IEN - 7978

For more efficient . . .

LIQUID HANDLING

USE...

BOWSER XACTO...

the world's most widely used meter!

If you measure liquids, you need Bowser XACTO meters. Many hundreds of users — handling hundreds of different liquids — have found it to be the easiest, most efficient, accurate and dependable method of control they have ever used. XACTO can do the same for you!

Push-button operation delivers predetermined quantities . . . eliminates guesswork . . . will even print a delivery ticket when desired.

Write TODAY for full facts on XACTO!

BOWSER, INC.
1338 Creighton Ave., Fort Wayne 2, Ind.

REGIONAL OFFICES: ATLANTA • CLEVELAND • DALLAS • FORT WAYNE • KANSAS CITY • NEW YORK • SAN FRANCISCO • WASHINGTON, D. C. • HAMILTON, ONT.

If you write maker identify as IEN - 7979

A SAFE, FAST PRODUCTION VISE

NOW!

SAFE—Both Hands Free To Guide Work

Studebaker Hydraulic SPEEDVISE

For fast and accurate production • Pressures to 7½ tons obtained with easy strokes on a foot operator • Ideal for operations such as assembling, forming, punching, presswork, cutting, straightening and bending — all vise jobs.

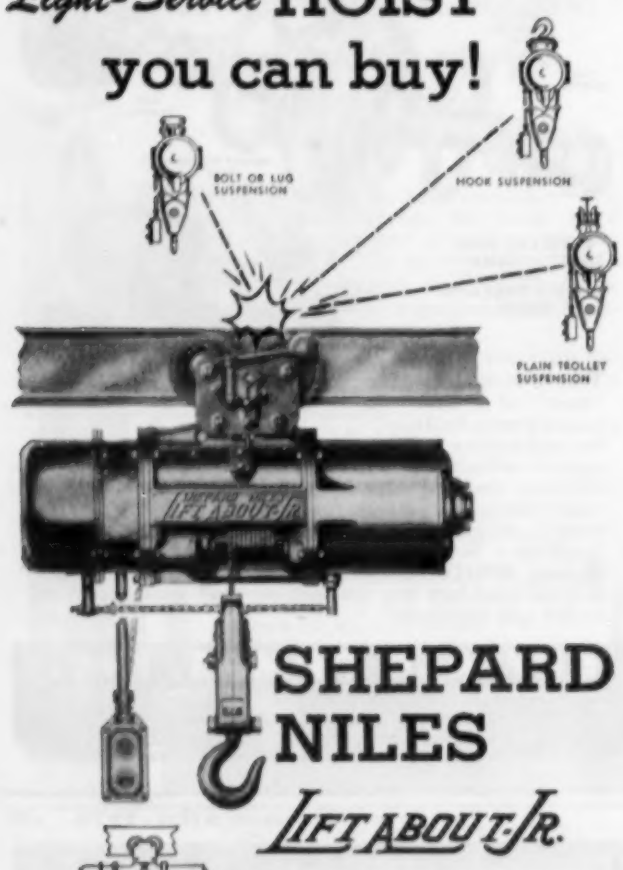
Write for bulletin No. 54

Studebaker MACHINE COMPANY

1235 South Ninth Avenue • Maywood, Illinois

If you write maker identify as IEN - 7980

TOUGHEST *Light-Service* HOIST you can buy!

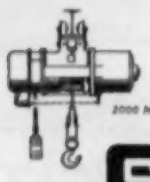


SHEPARD NILES

LIFT ABOUT-JR.

500 T Parallel or Cross Mounted

1000 J Parallel or Cross Mounted



2000 M Parallel or Cross Mounted

Hook your load to a Lift About-Jr.—it's the toughest light-service hoist you can buy. This rugged Shepard Niles Hoist is ideal for a hundred-and-one lifting jobs, guarantees you years of dependable service. It offers trouble-free wire rope hoisting, either rope or push-button operation.

Let a Shepard Niles representative tell you about the complete Lift About-Jr. line. He'll help you select the hoist with the right capacity and controls for your job.

SHEPARD NILES CRANE AND HOIST CORPORATION

MAIL COUPON

SHEPARD NILES Crane and Hoist Corporation
1045 Schuyler Ave., Montour Falls, N.Y.

( ) *Please send me new Lift About-Jr. Bulletin.*
( ) *Please have a representative call.*

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 7982

GRINDING . . Multiple assembly of abrasive cloth wheels for finishing

Source: MERIT PRODUCTS INC.
4023 Irving Place, Dept. IEN, Culver City, Calif.

Removes scratches, burrs

The company announces availability of multiple wheel units made up of its Grind-O-Flex flexible grinding wheels, previously described IEN-10226-53. Three of the wheels are shown mounted together to form a single broad unit for application over a considerable area. Any number of the units can be assembled in increments of 1 in. for fixed installations. Three to five wheels are recommended for best results on a portable shaft or tool. Weight per wheel is about 7 ounces.

Each wheel is made up of individual radial leaves permanently sealed to a hard core to mount on a shaft or arbor. Flanges are held in place by a nut. Standard wheel diameter is 6½ inches. Grit ranges from coarse to fine.

If you write maker identify as IEN - 7983

PIPE FITTING . . Cast iron base available in 2 to 4 in. pipe sizes

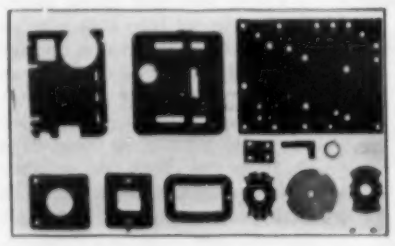
Source: HOPE ELECTRICAL PRODUCTS CO.
338-A Wilson Ave., Dept. IEN, Newark 5, N. J.

Cover bolts on

New base combines a rigid threaded support to take a vertical pipe with a cover equipped water tight compartment suited for wiring connections. The base can be employed to support lighting fixtures and other equipment such as signaling, alarm and police call boxes. The pipe threads into the opening at the top. Wiring can be brought into the enclosed compartment through the pipe nipple in the base center. The unit can be employed as the anchoring means for pipe railings as well as for upright pipe support.

If you write maker identify as IEN - 7984

Phenolic sheet materials, vulcanized fibre, insulation paper can be blanked and pierced to produce specified shapes in the "short run" stamping department at Federal Tool & Mfg. Co., 3600 Alabama Ave., Dept. IEN, Minneapolis 16, Minn. Sizes are to 9 by 12 by ⅛ inch. Tolerances are within 0.002 inch. Representative examples are illustrated.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7985

FOR EYE GUARDS ON GRINDING MACHINES
Irwin Auger Bit Company uses . . .

COCOR CR-39*

because:
- it is scratch-proof and pit-proof
- it is impervious to chemical attack
- it has high impact strength
- it is optically clear

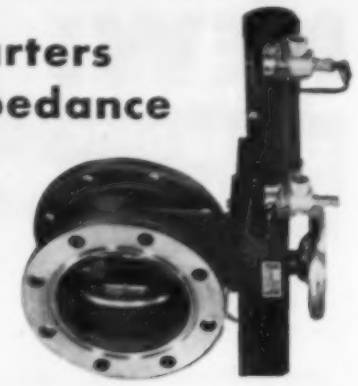
*a clear, hard thermosetting allymer plastic

For further information, see Ic/Ca in Sweet's Product Design File.
For catalog and samples of COCOR plastics, write to

CAST OPTICS CORPORATION
RIVERSIDE 3, CONNECTICUT
specialized plastic materials for specialized design requirements

If you write maker identify as IEN - 7986

Headquarters for low-impedance *high vacuum valves*



The *CVC* pneumatically-driven, solenoid-operated high vacuum valve shown here is for remote control of high vacuum pumping systems.

If your need is for hand-operated valves, or AC and DC solenoid-operated valves, or combination valves and water-cooled baffles, *CVC* can furnish them, too.

CVC high vacuum valves are designed for minimum impedance to the gas flow. They're simple to operate, easy to maintain, and trouble-free. All are guaranteed leak-free and capable of maintaining your lowest commercially feasible vacuum.

Whatever your need, chances are *CVC* has the valve in stock. Our nearest field representative would like to help you solve your vacuum valve applications, or other high vacuum problems.

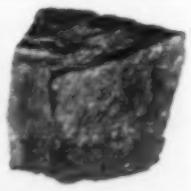
Write Consolidated Vacuum Corporation, Rochester 3, N. Y. (a subsidiary of Consolidated Engineering Corporation, Pasadena, Calif.)

CVC

Consolidated Vacuum Corporation
Rochester 3, N. Y.
designers and manufacturers of high vacuum equipment
SALES OFFICES: New York, N.Y., Chicago, Ill., Boston, Mass., Camden, N.J., Palo Alto, Calif.

If you write maker identify as IEN - 7987

Take NATURAL EMERY



it is STRONG
it is HARD and TOUGH
it is NON-BRITTLE
it is NON-ABSORBENT

Process NATURAL EMERY

crush it into PROPER SHAPES
screen it into PROPER SIZES
. . . and properly PROPORTION
the shapes and sizes into a *100 pound unit*

and you have CORTLAND EMERY AGGREGATE

for making EMERI-CRETE FLOORING REG. U. S. PAT. OFF.

the superior, time-tested

3/4" HEAVY DUTY FLOOR

Let us send you the "*Romance of Emery*" or have our representative make a "no obligation" survey of your flooring problems.

WALTER MAGUIRE COMPANY, INC.
60 EAST 42nd STREET, NEW YORK 17, N. Y.
Detroit: 12147 Manor Ave. • Washington, D. C.: 500 Walker Bldg.
Chicago: 2817 E. 77th St.

If you write maker identify as IEN - 7988

IMPROVED QUALITY—LOWER COST

TURNABOUT®

ADJUST • A • FORK
HYDRAULIC LIFT TRUCK
with interchangeable forks

INCLUDING CHOICE OF 30", 36", 40", 42", 48" FORKS

Improved design . . . mass production techniques, give you a quality product, **properly priced.** Proven superior performance . . . extra strength . . . highly maneuverable . . . easy operation. Resinoid type casters and aluminum leader wheels at no extra cost.

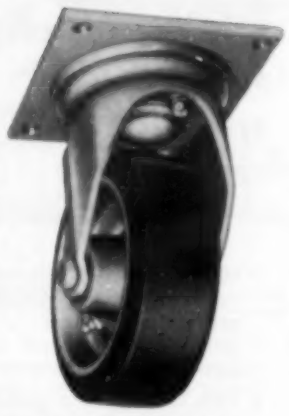
Easily interchangeable forks available in five standard lengths. Adjustable on truck frame to provide 25" or 27" width.

Unconditionally guaranteed for one year Write for descriptive bulletin

RACK HYDRAULIC EQUIPMENT CORPORATION
CONNELLSVILLE, PENNSYLVANIA
AGENTS IN PRINCIPAL CITIES UNITED STATES, CANADA, EUROPE

If you write maker identify as IEN - 7989

New *sealed* casters cut maintenance cost



Forget about caster lubrication — Bassick's new "3D" line virtually eliminates it with three outstanding design innovations:

Baffle ring on swivel bearing blocks dirt and water.

Grease retainer prevents loss of swivel lubrication.

Wheel bearing seal keeps dirt out, grease in.

"3D" sealed casters come in 5", 6" and 8" sizes, have fully case-hardened raceways, extra-strong king pin and double ball-bearing swivel. Write for catalog sheet 3D99-53. The Bassick Company, Bridgeport 2, Conn. *In Canada:* Belleville, Ont.

Bassick A DIVISION OF STEWART SW WARNER

MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

75 YEARS OF CASTER LEADERSHIP

If you write maker identify as IEN - 7990

Wrapping tight, wrinkle-free "skins" of transparent Pliofilm to the contours of meats, cheeses, fruits, vegetables, toys, soap, etc., the Stokes & Smith Stretchrap Machine packages up to 15 odd-shaped products per minute.

Fed from a roll, the Pliofilm is first heated, then stretched and drawn by vacuum into a pocket to receive the product. Driving the cam shaft that actuates the air valves controlling the operation of the machine is a motor-powered, Winsmith Worm Gear Speed Reducer, Model 2 DB, with an input speed of 1350 rpm and a reduction ratio of 25:1.

Carrying a steady stream of contour-wrapped products from the machine, the conveyor is driven by another Winsmith Reducer, Model DB, which is powered by the same main drive 3 HP motor. With an input speed of 1440 rpm, it operates at a 50:1 reduction ratio.

In stressing advantages of Winsmith Reducers, Stokes and Smith Company states, "They have worked in nicely with our space limitations."

Compactness, coupled with ruggedness, have been key factors in establishing the Winsmith name, *plus this fact:* The Winsmith line fulfills any speed reduction need throughout the 1/100 to 85 hp range in ratios from 1.1:1 to 50,000:1. Request Catalog 148 for details.

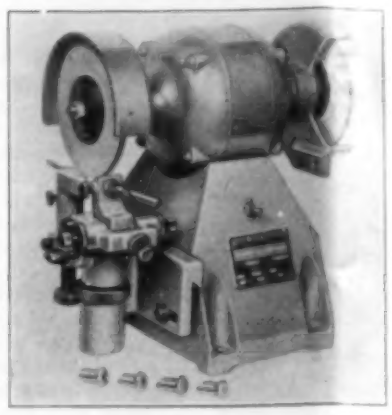
WINSMITH, INC.
10 DAVIS STREET
SPRINGVILLE (Erie County), N. Y.

EQUIPPED WITH

If you write maker identify as IEN - 7992

GRINDING . . Twist drill sharpener cuts "crankshaft" point into drill end

Source: UNION TWIST DRILL CO.
Dept. IEN, Athol, Mass.



For clean cutting action

New machine has been developed to produce a "crankshaft" point on drills ranging from No. 1 to No. 50, from A to U and from 3/64 to ⅜ inch. The grinding operation consists of cutting away or notching the drill point so the usual chisel edge becomes a pair of secondary cutting lips to remove two secondary chips.

This type of point is particularly suited for materials that tend to work harden, for deep hole drilling, and to drill stainless steels and tough alloy materials. It also is employed for skin drilling aluminum, stainless steel and heat treated parts for aircraft use.

The machine is driven by a ¼-hp. 110-volt 60-cycle motor at 3,450 rpm. The motor is enclosed design. The machine occupies a bench space measuring 19 by 12 inches. It mounts a 6-in. drill grinding wheel at one end and a 6-in. general utility wheel at the other. The shaft rotates on free loaded ball bearings.

A drill is rocked into the wheel to grind one notch. Then it is returned, indexed 180 deg., and the operation is repeated for the other notch. An adjustable diamond truing device is moved across the wheel in one quick motion. A tilting fixture, adjustable for any sharpening angle, is employed with flute guiding drill bushings for each diameter of drill.

If you write maker identify as IEN - 7993

PROTECTING . . Safety spectacle with hinged bridge to fit on any face

Source: WILLSON PRODUCTS INC.
217 Washington St., Dept. IEN, Reading, Pa.

Styles WC47 and WCG47

Contour-Specs trade names a new safety spectacle. It employs a nickel silver hinge that permits the spectacle to adjust for any bridge width from 18 to 26 mm. Plastic strips are molded as an integral part of the frame to attach side shields. They add strength to the frame and protective closure around the eyes. Side shields can be supplied plain or with perforations. The half-plastic half-cable temples provide safe comfortable fit on any type of face. The frame is molded acetate butyrate with 47-mm. lens size. The standard lens is Clear 6.00 C. Super-Tough. Single units list at $3.05. Willsonite Super-Tough lenses increase the price to $3.65.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7994

If you write maker identify as IEN - 7995

How to check precision gears quickly, conclusively, to closest tolerances

With the Kodak Conju-Gage Gear Checker, you pass every right gear, reject every wrong gear—check tooth-to-tooth composite error of .0002".

The revolutionary Kodak Conju-Gage Worm Section, used with both spur and helical gears, provides a new standard of gage precision, combines accuracy with economy. Results are recorded automatically for permanent reference.

Write for a copy of the booklet, "Kodak Conju-Gage Gear Testing Principle," which shows how Conju-Gage Instrumentation can help solve your precision gear problems.

Special Products Sales Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak

CONJU-GAGE INSTRUMENTATION

If you write maker identify as IEN - 7996

New Norton Cut-Off Wheels Get Industry's O.K.

***Reports from all areas prove how the R50 and B9 add the profit-boosting* "TOUCH of GOLD"**

"Faster cutting, longer lasting . . . 450 more cuts per wheel . . . 72% more durable . . . no burn or breakage . . . 120% longer life . . . best wheels ever used."

Performance reports like these are coming in every day telling how the new Norton R50 and B9 cut-off wheels are setting new records for extra long service life and improved cutting action.

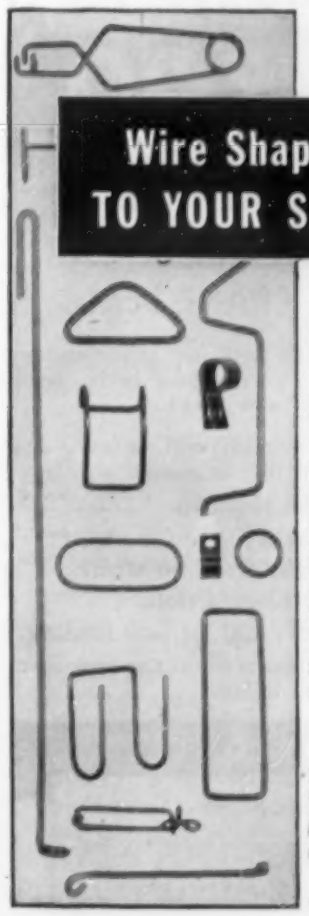
Why not add these money-saving advantages to your own cutting-off operations — with the right Norton cut-off wheel for every job? See your Norton Distributor, or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Massachusetts. W-1571

NORTON

and its ***BEHR-MANNING*** *division*

NORTON: Abrasives • Grinding Wheels • Grinding Machines • Refractories
BEHR-MANNING: Coated Abrasives • Sharpening Stones • Pressure Sensitive Tapes

If you write maker identify as IEN - 7997



Wire Shapes and Forms TO YOUR SPECIFICATIONS

● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

If you write maker identify as **IEN - 7998**

POLYPENCO® NYLON SHAPES

NOW! Save on Nylon Bushings

eliminate lubrication . . . improve wear . . . reduce noise

- Design bearings, packings, rollers, and wear parts from Polypenco rods
- Eliminate molding dies . . . machine in your own shop
- Use standard metalworking tools
- Sizes from ⅛" to 6½"
- Uniform high quality . . . technical help in design and fabrication.

WRITE FOR BULLETIN ON NYLON SHAPES

The POLYMER CORPORATION of Penna. • Reading, Penna.
In Canada Polypenco, Inc., 2052 St. Catherine W., Montreal, P.Q.

POLYPENCO® NYLON
... teflon* and other non-metallics

Stocks: Reading • Chicago • Los Angeles • Newton (Mass.) • Branford (Conn.)

**trademark for DuPont tetrafluoroethylene resin*

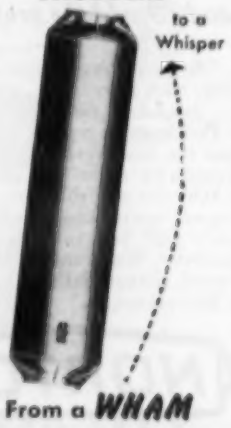
If you write maker identify as **IEN - 7999**

STOP THAT NOISE!

from Air, Steam and other gas discharges

with

BURGESS-MANNING SNUBBERS



Stop that noise and profit through better neighbor and employee relations. Avoid compensation claims.

Burgess-Manning Snubbers are engineered to effectively correct your specific noise problem. There is no obligation for recommendations. Send us a description of your problem.

From a *WHAM*

BURGESS-MANNING COMPANY
743 East Park Avenue, Libertyville, Illinois

If you write maker identify as **IEN - 8000**

$200 price reduction

ON EMERY CS-10 CRANE SCALE

Increased production makes a new low price on the Emery CS-10 Crane Scale . . . the best in its field . . . now only $995.

The Emery CS-10 Crane Scale provides . . .

- ✔ weighing up to 10,000 lbs. *in transit.*
- ✔ only 19⅛ in. headroom required.
- ✔ guaranteed accuracy ±0.2%.
- ✔ no knife edges, no sticky seals, no wear.
- ✔ rugged industrial-type construction.
- ✔ big 21½ in. unbreakable dial for easy reading.

Order your Emery CS-10 Crane Scale at the new low price. Send for information today.

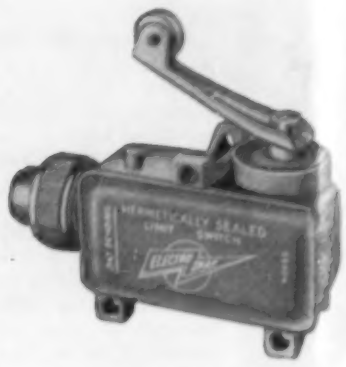
THE A. H. EMERY CO. NEW CANAAN 7, CONNECTICUT

Please send me descriptive bulletin No. 541.
NAME _____
POSITION _____
Attach to, or write on, your company letterhead.

If you write maker identify as **IEN - 8001**

SWITCH . . Snap acting design, hermetically sealed, for limit duty

Source: ELECTRO-SNAP SWITCH & MFG. CO.
4220 W. Lake St., Dept. IEN, Chicago 24, Ill.



Operates anywhere

The sealed housing, in this new assembly of the company's snap-acting switch, previously described IEN-4345-54, encloses the operating elements in an inert gas. Leads are brought out through a glass-to-metal header. A teflon and silicone diaphragm is bonded in place by a mechanical seal retainer to provide for leak-proof operation of the wheel equipped switch lever. This lever, shown in the illustration, is representative of designs available for given applications.

It is not possible for fluids, dust, dirt or gas to get into the interior. The switch will operate satisfactorily at high or very low temperature. It can be completely immersed in water. Electric rating is 10 amp. on 110/220-volt ac. or 28-volt dc. for the snap-action contacts.

If you write maker identify as **IEN - 8002**

BATTERY CHARGING . . Rectifier and controls, 6 to 32 volt ratings

Source: AUTOMATIC SWITCH CO.
391 Lakeside Ave., Dept. IEN, Orange, N. J.

Maintains charge

Bulletin 203S designates a new battery charger consisting of a tapped transformer for application on single phase ac. at 110 to 600 volts, a selenium rectifier for industrial duty, a continuously adjustable rheostat to vary the output current from 0.015 to 2 amp., an ammeter to indicate the charging current, two terminal strips for input and output connections and a 5-amp. fuse to protect the equipment.

The rheostat is adjusted by turning a slotted screw located in the housing face below the top terminal strip. A diagram on the housing face shows the correct terminals to use for given input. Two housing sizes measure 3½ and 4¼ in. in width, 3¾ to 4¾ in. from front to back and 9⅝ and 11⅛ in. in overall height. List price ranges from $42.50 to $76.

If you write maker identify as **IEN - 8003**

Col-Q-Lators are new custom designed calculating devices that can be employed to determine the size of parts or components, to estimate costs, to calculate strength of materials, illumination, capacities, tool sizes. A department has been set up by G. L. Collord & Sons, 1106 W. Madison St., Dept. IEN, Maywood, Ill., to design and manufacture the units. Representative one is a gasoline mileage calculator for motorists. Another is a cocktail mixer calculator.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8004**

CAN THESE CHARACTERISTICS IMPROVE YOUR PRODUCT?

Strength ★ Beauty ★ Light Weight
Durability ★ Workability

MET-L-WOOD

METAL BONDED TO PLYWOOD

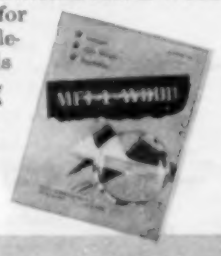
has them ALL!

Met-L-Wood is metal bonded permanently to plywood to create a material of real versatility for industrial engineers and designers. Many different metals, woods, shapes and finishes are available in Met-L-Wood to meet your needs—from table tops to moisture-vapor-proof rooms...And Met-L-Wood Engineering Service is yours for the asking. Write for the bulletin described below for details

FREE TECHNICAL DATA BOOK

Met-L-Wood Bulletin 521 contains technical data, application photos and facts to help you visualize the possibilities and economies of Met-L-Wood. Send for your copy now.

Write for Bulletin 521



MET-L-WOOD CORPORATION
6755 West 65th St., Chicago 38, Illinois

If you write maker identify as **IEN - 8005**

FREE—Illustrated catalog on a better method of grinding conical—spherical—cylindrical surfaces

Here are valuable details on the Geargrind Universal Oscillating Grinder. Whether you require production economy or tool room accuracy on internal and external grinding, you'll save time and money with this versatile and rugged grinder. This catalog gives complete information on types of work performed, methods of application and specifications. Write today—we will be happy to send you a copy.

THE GEARGRINDING MACHINE CO.
3923 Christopher, Detroit 11, Michigan

GEARGRIND Detroit

If you write maker identify as **IEN - 8006**

WESTON *miniature* ELECTRICAL RECORDER

EXTREME COMPACTNESS . . . CORMAG® SELF-SHIELDING MECHANISM . . . A-C AND D-C MODELS

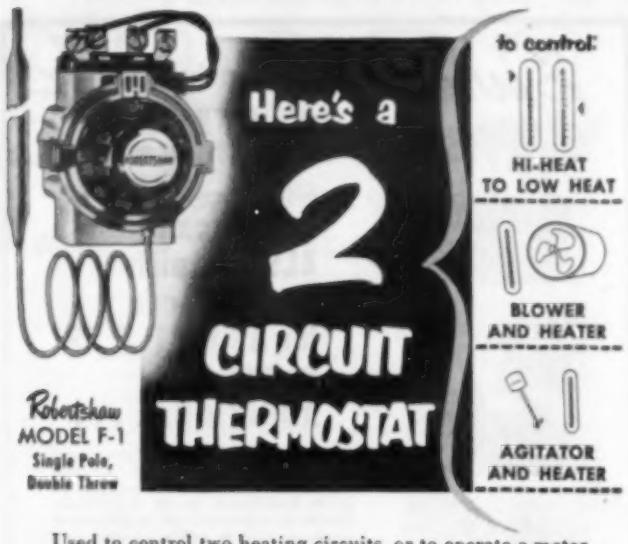
Employing the Weston CORMAG mechanism, this new recorder combines a high degree of shielding with new compactness and light weight. For example, the magnetic field created by a conductor carrying 15,000 amperes at a distance of 3 feet would cause a temporary error of less than 1 per cent. Overall size is only 6¾" x 6¼" x 7" deep; chart size 4" dia.; weight only 1½ lbs.

It's the ideal instrument for recording ampere-hour demand—checking overloads or unbalanced conditions—monitoring radio detectors—recording current and duration in electroplating and metal refining—recording speeds—making life tests on batteries, lamps, etc.

Available in required ranges for A-C or D-C voltage or current measurement needs. Also furnished with bracket for wall mounting; and with flange case for flush panel mounting. Bulletin available giving complete specifications and prices . . . WESTON Electrical Instrument Corporation, 614 Frelinghuysen Avenue, Newark 5, New Jersey. 7673

WESTON *Instruments*

If you write maker identify as IEN - 8008



Used to control two heating circuits, or to operate a motor when such operation is required in combination with a heater or commercial laundry dryer, etc. where it shuts off current to heating element and turns on signal light.

When thermostat calls for heat, high heat element automatically cuts in and holds until set temperature is reached. Main contacts are then broken automatically and low, or holding, element is cut in to function until drop in temperature again calls for heat. Maximum temperature range 550°F. Write for full information.

Robertshaw® THERMOSTAT DIVISION

Robertshaw-Fulton Controls Company, Youngwood, Pa.

If you write maker identify as IEN - 8009

At Last...

a mechanical blind rivet that has *all three primary advantages*

1 High clinch

2 Low deflection

3 Low cost

Riv-tite Blind Rivets can be applied with any manual or pneumatic blind rivet gun on the market. Write for further information and price lists. For unusual application requirements, our experienced Riv-tite engineers are readily available to take care of your needs.

Riv-tite

OLYMPIC SCREW & RIVET CORPORATION

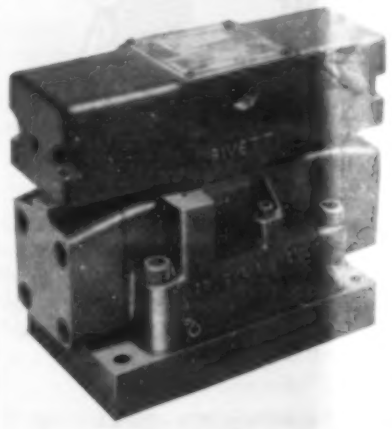
11406 South Downey Avenue • Downey, California

Manufacturer of blind fasteners, screws, bolts, rivets, and specialized headed and threaded products.

If you write maker identify as IEN - 8011

VALVE . . Four way hydraulic, to 3,000 lb., solenoid pilot operated

Source: RIVETT LATHE & GRINDER INC.
22 Riverview Road, Dept. IEN, Boston 35, Mass.



Catalog Section 260

Sub-plate mounting, in which a steel plate carries the pipe threads and the valve is bolted to it, features the construction of this new Series 6000 hydraulic operating valve. Between the sub-plate and the valve is a steel gasket plate with O-ring equipped ports to seal against leakage. The valve is available in seven piston designs and in three arrangements of solenoid operated pilot for pressure to 3,000 pounds. It is made in 1 and 1½-in. basic sizes which can be reduced at the pipe connections to ½ or ¾ in. or to 1¼ inches. Overall length is 9½ and 15¼ inches. Overall width at the base is 4½ and 7¾ inches.

The pilot valve, at the top, carries a central wiring enclosure with threaded connections for ½-in. conduit on both sides. The solenoids are continuous duty shock mounted units, dust sealed and moisture resistant. They operate on 3.6 amp. inrush and 0.45 amp. holding on 110 volts. The pilot valve can be used as a ¼-in. direct solenoid operated valve, also rating 3,000 pounds. The assembly meets JIC requirements.

If you write maker identify as IEN - 8012

MARKING . . Electric etcher marks work through a film stencil

Source: CROWN INDUSTRIAL PRODUCTS CO.
902 Amsterdam St., Dept. IEN, Woodstock, Ill.

For finished work

E-Z Mark Etcher is a new assembly of power unit and a separate tray attachment to hold a marking stencil and electrolyte solution in the company's line of electric etching equipment, previously described IEN-9622-49. Circular work is rolled over the stencil. Flat work is placed upon it. The equipment is particularly suited to mark hardened and ground surfaces of metals such as aluminum, stainless steel, copper, zinc, and most platings.

The equipment is supplied with a list of instructions and an expendable parts list permanently marked on the top surface of the power unit. Stencils and fluids are available in polyethylene containers. Operation can be specified for 110 or 220-volt ac. A rheostat adjusts to control the etched depth.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8013

HERE'S YOUR ANSWER FOR EFFICIENT CLOSE QUARTERS HANDLING

KALAMAZOO SPEED TRUCKS

Famous as the maneuverable and versatile burden carrier—also used as tool trucks, maintenance and lubrication trucks, personnel carriers, fire trucks, etc. Easily adapted to suit your exact needs. 2000 and 3500 lb. capacity. Special deck sizes available.

KALAMAZOO KAL-TRUCKS

Perfect for heavy haul in congested areas, inside or out. Easy to load; easy to dump. Handles 3000 lbs. of bulk materials. Climbs 20 to 30 degree ramps. Heavy duty truck of all trades.

Both these versatile trucks have tractor type construction. 14 HP Wisconsin engines, 15 MPH speed. 3 forward, 1 reverse speed. Turning radius under 7', 3 wheel maneuverability.

WRITE FOR COMPLETE INFORMATION TO

KALAMAZOO MANUFACTURING COMPANY
1027 Reed St., Kalamazoo, Mich., U.S.A.
FOR OVER 71 YEARS SERVING INDUSTRY AND AGRICULTURE ALL OVER THE WORLD

If you write maker identify as IEN - 8014

BALL BUSHING

The BALL BEARING for your

LINEAR MOTIONS

LOW FRICTION • LOW MAINTENANCE
ELIMINATES BINDING AND CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A or Low-Cost Series B BALL BUSHINGS.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and performance with BALL BUSHINGS! Now manufactured for ¼", ⅜" ½", 1", 1⅛", 2" and 3½" shaft diameters.

THOMSON INDUSTRIES, INC.
Dept. I, MANHASSET, NEW YORK

Write for descriptive literature and the name of our representative in your city.

Also manufacturers of NYLINED Bearings — DuPont NYLON with or without metal sleeve — for rotation and reciprocation.

PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

If you write maker identify as IEN - 8015

....WHAT'S NEW AT BRISTOL....

CONTINUOUS STANDARDIZATION with no dry cells

. . . in Bristol Electronic Dynamaster Potentiometers and Pyrometers

• **CONTINUOUS STANDARDIZATION** eliminates need for dry cells—supplies voltage that is continuously compared with standard cell.

• **CONTINUOUS OPERATION—NO TIME OUT.** With continuous standardization, the potentiometer is free to continuously measure, record, and control. No time out or interruption is required for periodic standardization.

• **NO STANDARDIZING MECHANISM.** Continuous standardization is taken care of electrically. There is no standardizing mechanism.

For the complete story on the modern Bristol Dynamaster, write for free 35-page booklet P1245. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn. 3.19

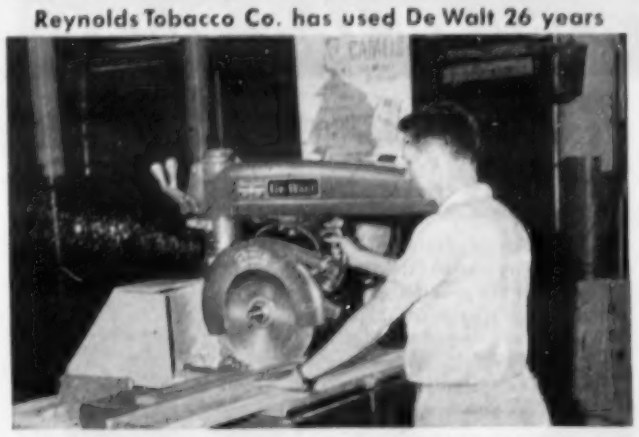
BRISTOL *THE DEPENDABLE GUIDEPOST OF INDUSTRY*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN - 8016

All-Purpose AMF De Walt is best for plant maintenance!

Reynolds Tobacco Co. has used De Walt 26 years



You'll find *one* low-cost AMF DeWalt® will meet *all* your plant maintenance needs—and that includes all types of construction work and boxing and crating.

Just one DeWalt turns out pallets, conveyor bucks, crating, book shelves, ladders and many other products. It's amazingly versatile—cross-cuts, miters, bevels, rips, dadoes, shapes and many others! Tops in speed, accuracy and safety, too.

Send for catalog to DeWalt Inc., Dept. IEN-54-7, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.

DE WALT
POWER SAWS
In Canada: De Walt Canada Ltd., Guelph, Ontario

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

If you write maker identify as **IEN - 8017**

New electronic device controls batch weighing automatically, remotely

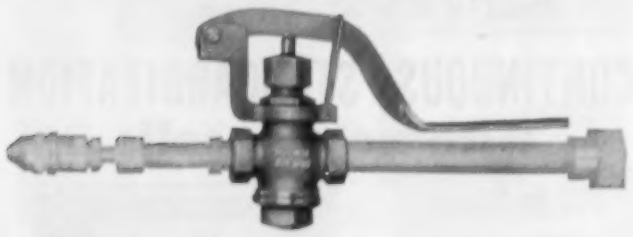
A leading rubber producer controls latex batch weighing automatically, remotely *and economically* with Baldwin SR-4 load cells. In an endless variety of applications, users of Baldwin SR-4 load cells have found them fast, accurate and economical for measuring load, fluid pressure or torque.

Send today for our latest bulletins! Address Department 3013, Baldwin-Lima-Hamilton Corporation, Philadelphia 42, Pa.

BALDWIN-LIMA-HAMILTON

Philadelphia 42, Pa. • Offices in Principal Cities
In Canada: Peacock Bros., Ltd., Montreal, Quebec

If you write maker identify as **IEN - 8018**



Spray, Clean with O-B Lever-Operated Globe Valve

This lever-operated O-B globe valve has many applications for spraying and cleaning in industry, on farms, and in commercial operations. The valve is shown here with a typical spray attachment. Ohio Brass supplies darker shaded parts--valve, yoke, lever, and wire clip. Pressing on the lever opens the valve. It closes automatically when pressure is released. Clip can be used to hold valve in open position. Globe comes in ¼, ⅜, ½, ¾, and 1-inch sizes. Rated pressure is 150 pounds for steam, 300 pounds for water, oil, or gas.

Ohio Brass makes a complete line of bronze valves for industrial use. Write today for additional information.

4458-V

O-B VALVES Ohio Brass MANSFIELD OHIO, U. S. A.

If you write maker identify as **IEN - 8019**

A HANDY PUMP *around the Plant!*

Ready for Action Anywhere—Anytime

A wide range of drainage and water handling jobs are "right down the alley" for this powerful, easy-to-handle pump. It's only 20" x 13" x 19". Weight only 84 pounds. Suction 1½"; Discharge 1½". Efficient and economical to operate. Sturdy construction. Costs little for maintenance.

You can pump up to 5,400 gallons per hour against a 15-foot head or 600 gallons per hour against an 80-foot head with the Deming Fig. 3304 Portable Self-priming Centrifugal Pump. You can get it in bronze fitted, all iron or all bronze construction. Impeller is mounted directly on engine shaft. Double rotary type seals are furnished with all units. Pump shown is powered with a Briggs & Stratton Model "6FB" 1½ H.P., four cycle, air cooled gasoline engine having a high tension magneto. Fig. 341 strainer included with each unit. Write for complete data or ask your Deming Distributor.

The DEMING Co.

521 BROADWAY • SALEM, OHIO

Brief reviews to advise you of available new information published by the manufacturers covering products they offer

If you write maker identify as **IEN - 0640**

ABRASIVES . . Coated-abrasive belts and discs to grind and polish non-ferrous metals. Specific application stories in 8-page Bulletin A-AIF show how. Minnesota Mining & Mfg. Co., 900 Fauquier St., Dept. IEN, St. Paul 6, Minn.

If you write maker identify as **IEN - 0641**

ADHESIVES . . Water-soluble glue is flexible when dry. It is for use on paper, cloth, leather. It resists action of oil, solvents, gasoline. "Pliatex", 6 pages. Swift & Company, 4115 Packers Ave., Dept. IEN, Chicago 9, Ill.

If you write maker identify as **IEN - 0642**

BALANCING . . Automatic machine weighs a part such as a connecting rod, then mills it to predetermined amount while another piece is being placed by the operator. Bulletin 2100, 4 pages. Motch & Merryweather Machinery Co., 715 Penton Bldg., Dept. IEN, Cleveland 13, Ohio

If you write maker identify as **IEN - 0643**

DRIVE BELTS . . Engineering data on multiple V-belts includes selection of charts, hp. rating tables, correction factors, installation allowances, length matching, groove dimensions. Booklet S-5132, 32 pages. Goodyear Tire & Rubber Co., 1144 E. Market St., Dept. IEN, Akron 16, Ohio

If you write maker identify as **IEN - 0644**

BENDING . . Hand and power machines to bend, shear, punch, notch, roll in fabricating metal parts. Bulletin D-SC, "Die-Less Duplicating," 8 pages. O'Neil-Irwin Mfg. Co., 547 Eighth Ave., Dept. IEN, Lake City, Minn.

If you write maker identify as **IEN - 0645**

BUILDINGS . . Line of maintenance materials for floors, walls, roofs includes resurfacing, patching, sealing products. Folder MP, 6 pages. Stonhard Co., 1306 Spring Garden St., Dept. IEN, Philadelphia 23, Pa.

If you write maker identify as **IEN - 0646**

ELECTRIC CABLE . . Portable lighting and tool lines in 50 and 100-ft. lengths have outlets, connectors, plugs and other fittings molded into one-piece neoprene units. Design was originally for use in mines. Bulletin B-52, 12 pages. Joy Mfg. Co., Oliver Bldg., Dept. SAL-57, Pittsburgh 22, Pa.

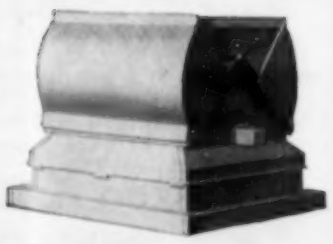
If you write maker identify as **IEN - 0647**

ELECTRIC CABLE . . Insulated wire and cable for power, control, lighting, portable cords, aluminum conductors. "Cable for Electric Utility Industry," 140 pages. U. S. Rubber Co., 1230 Sixth Ave., Dept. IEN, New York 20, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

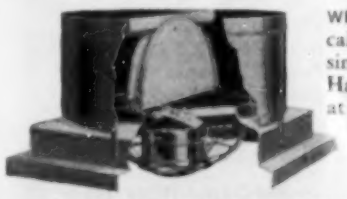
If you write maker identify as **IEN - 8020**

Swartwout "*Straight Through*" Ventilators provide efficient economical spot ventilation



For situations where fast powerful exhaust is desired, the *straight-through* type roof ventilator throws out unwanted elements in a hurry.

JECT-O-VALVE is completely enclosed when not in operation, and a solenoid-actuated lock holds top sections secure when closed. Made in 5 sizes, 28 capacities. Write for Bulletin J-B.



WHIRLOUT provides economical, effective ventilation with simple, sturdy construction. Half-disc dampers are pivoted at the center of its circular opening. 10 sizes, wide capacity selection. Write for Bulletin WH-B.

See our catalog in Sweet's Engineering or Architectural Files

18511 Euclid Avenue, Cleveland 12, Ohio

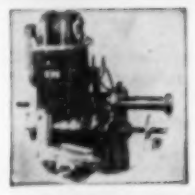
The Swartwout Co.

Roof Ventilators and Ventilating Louvers

POWER PLANT EQUIPMENT • PROCESS INDUSTRY CONTROLS

If you write maker identify as **IEN - 8021**

Sure! Turner can furnish ordinary 3 or 4 speed transmissions — BUT . . . Turner can ALSO furnish 6 or 9 speeds for AS LITTLE AS $10 to $20 ADDITIONAL . . .



Now, for slight added cost you can have 6 or 9 speeds at the "twist of a wrist." Models range from fractional to 60 H.P. Wide range of applications on machine tools as well as other equipment. Write for specification and descriptive catalog.

See your dealer or write for further details

TURNER 3R3 UNI-REDUCER

Now simplified speed reducer mounts on motor shaft with a torque arm to frame or base. Fits standard motors 1 to 5 H. P., 1800 RPM; 1 or 3 H.P. 1200 RPM. Reduction ratio 3.04 to 1. Write for information.

TURNER UNI-DRIVE Company

3479 Terrace Street Kansas City 8, Missouri

If you write maker identify as **IEN - 8022**

Hardness Readings in 2 seconds!

Webster PORTABLE **Hardness Testers** FOR NON-FERROUS METALS

TWO LOW-COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ¼". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-75 Direct hardness readings on copper, brass, etc.

Free FOLDER provides full information and shows sectional views.

Other models available

WEBSTER INSTRUMENT INC. Dept. N, 11856 Mississippi Ave. Los Angeles 25, California

If you write maker identify as **IEN - 8023**

NOW YOU CAN HAVE **METERED SURETY** IN HANDLING CORROSIVE LIQUIDS

All Stainless Steel Meter

Rotocycle meter, cut away to show the all-revolving rotor construction.

CONTROLS FORMULAS, COSTS, INVENTORIES

Rockwell Model 2-BC stainless steel meters provide indisputable records for the quantities of corrosive liquids used in mixing formulas. They provide basic accounting facts for accurate cost identification; for inventory controls; for tax analysis purposes.

These meters are constructed *inside and out* of stainless steel. Rated capacity 100 gpm. Quantity control registers and electrically actuated remote registration systems are available. Described in bulletin OG-403. Write *Rockwell Manufacturing Co., Dept. B-5403A Pittsburgh 8, Pa.*

YOU CAN RELY ON ROCKWELL

ROCKWELL INDUSTRIAL METERS

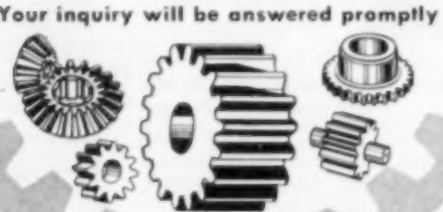
If you write maker identify as IEN - 8024

GEARS

of every description—made to your specifications

The gears you buy from E. B. Sewall are made by men who are fussy about specifications. They've got the finest equipment and know how to use it. If you specify .0002" tolerance, you get it—at each tooth on every gear we ship. We're in a brand new plant, equipped to handle your gear requirements. Send specifications and quantity for our quotation.

Your inquiry will be answered promptly



SEWALL

E. B. Sewall Mfg. Co., 696 Glendale St., St. Paul 14, Minn.

If you write maker identify as IEN - 8025

Lepel's 3 new

LOW COST • PORTABLE

HIGH FREQUENCY *Induction* HEATING UNITS

Ideal for....

- Production Heating of small parts
- Educational Institutions
- Research Laboratories
- Machine Shops
- Tool Rooms

HARDENING
MELTING • BRAZING
ANNEALING • SOLDERING

The Lepel line of induction heating units represents the most advanced thought in the field of electronics as well as the most practical and efficient source of heat yet developed for industrial heating. With a background of half a century of pioneering electrical and metallurgical experience, the name Lepel has become the symbol of induction heating equipment embodying the highest standards of engineering achievement, dependable low cost operation and safety.

Amazing in its speed, Lepel equipment reduces the time required for hardening, annealing, stress relieving, brazing, soldering and melting from minutes to seconds. It performs these operations with a degree of precision and uniformity rarely attained through other processes.

LEPEL Electronic Tube GENERATORS available from 1 kw. to 100 kw.
LEPEL Spark Gap CONVERTERS available from 2 kw. to 30 kw.

WRITE FOR THE NEW LEPEL CATALOG . . . 36 illustrated pages packed with valuable information on high frequency induction heating.

All Lepel equipment is certified to comply with the requirements of the FCC.

LEPEL HIGH FREQUENCY LABORATORIES, INC.
55th STREET and 37th AVENUE, WOODSIDE 77, NEW YORK CITY, N. Y.

NEW LITERATURE—Continued

If you write maker identify as IEN - 0648

BLAST CLEANING . . Abrasive thrown by centrifugal force cleans work pieces while they are tumbled on an apron conveyor. Bulletin 114-B, 8 pages, describes 36 by 42-in. model of the Wheelabrator Tumblast. American Wheelabrator & Equipment Corp., 1119 S. Byrkit St., Dept. IEN, Mishawaka, Ind.

If you write maker identify as IEN - 0649

OVERRUNNING CLUTCH . . Clutch-coupling unit is supplied in 18 sizes with 21 to 12,079 lb. ft. torque rating, .4 to 230 hp. rating per 100 rpm. "Clutch Coupling," 4 pages, provides a selection work sheet. Formsprag co., 23601 Hoover Road, Dept. IEN, Van Dyke, Mich.

If you write maker identify as IEN - 0650

COMPRESSOR . . Single-stage unit is a sliding-vane rotary design to serve as a compressor or vacuum pump. Rating is 42 to 3,250 cfm. with drive by a 3 to 250-hp. motor. Bulletin 16-B-8126, 12 pages. Allis-Chalmers Mfg. Co., 909 S. 70th St., Dept. IEN, Milwaukee 14, Wis.

If you write maker identify as IEN - 0651

ELECTRICAL CONTACTS . . Letter-size wall chart presents standard sizes of cross-bar and disc contacts of solid precious metal or composite metals. M & G Products Co., 1219 Webster Ave., Dept. IEN, Chicago 14, Ill.

If you write maker identify as IEN - 0652

TEMPERATURE CONTROLS . . Remote-reading dial thermometers, control and recording instruments, regulating valves, program controls, accessories. Catalog M-2-A, "Mechanical Instruments," 48 pages. Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Dept. IEN, Newark 5, N. J.

If you write maker identify as IEN - 0653

PNEUMATIC CYLINDERS . . Single and double-acting units for clamp and machine actuation, also operating valves, pneumatic presses, collets, work feeders, impact hammers, vises. You may be interested in the "one man factory" setups illustrated in 52-page 1954 "Air Power" Catalog. Mead Specialties Co., 4114 N. Knox Ave., Dept. 38, Chicago 41, Ill.

If you write maker identify as IEN - 0654

DOORS . . Overhead rolling doors in steel construction, hand and power operation, for service and fire-door application, also rolling grilles. Bulletin 79, 32 pages. Kinnear Mfg. Co., 820 Fields Ave., Dept. IEN, Columbus 16, Ohio

If you write maker identify as IEN - 0655

DRILL BUSHINGS . . Stock sizes of head and headless press-fit drill jig bushings, slip renewable bushings, liners, fixed renewable bushings. Bulletin 35936, 14 pages, also has a conversion chart for seven makes. Ex-Cell-O Corp., 1200 Oakman Blvd., Dept. IEN, Detroit 32, Mich.

If you write maker identify as IEN - 0656

CHAIN DRIVES . . Catalog CD-102-B has 52 pages of data on stock roller chain and sprockets, standard drive combinations, split taper compression mounting bushings. Browning Mfg. Co., 16 Chester St., Dept. IEN, Maysville, Ky.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 8027

PICKS UP DIRT, CHIPS, LIQUIDS, CUTTING OILS

- Easily
- Quickly
- Thoroughly

at less cost than ever before. The American Model No. 500-55 picks up 50 to 100% faster due to a new exclusive air handling feature that produces more power than any vacuum of the same motor rating.

Ideal for flood control, boiler cleaning, sump cleaning and powerful enough for any large or difficult industrial, store or building job. By-pass motor unit can be detached for use as a powerful blower or portable vacuum cleaner. Lid fits any 55 gallon tank, permitting shifting from one drum to another in a matter of seconds for easier disposal. Extra large tank and bag keeps machine operating longer between emptyings.

Simple to operate, nothing to get out of order, sturdily built for years of trouble-free service. The model No. 500-55 is only one of a large line of industrial and building vacuum machines, complete with attachments, all suited to a wide variety of uses and applications.

Write for full details today.

AMERICAN CLEANING EQUIPMENT CORP.
2031 South Halsted Street • Chicago 8, Ill.

If you write maker identify as IEN - 8028

Control Horsepower with the

A-C Starter Line

the RIGHT control for every need

ALLIS-CHALMERS **Motor STARTERS**

For across-the-line control of motors operating on 110 to 600 volts, Allis-Chalmers offers:

MANUAL STARTERS — Suitable for mounting on small machines. Start and stop buttons on starter. Sizes 0 and 1 for motors to 7½ hp.

MAGNETIC STARTERS — Provide convenience of local or remote control...thermal overload protection and undervoltage protection or release. Sizes from 0 to 7 for motors from fractional to 600 hp.

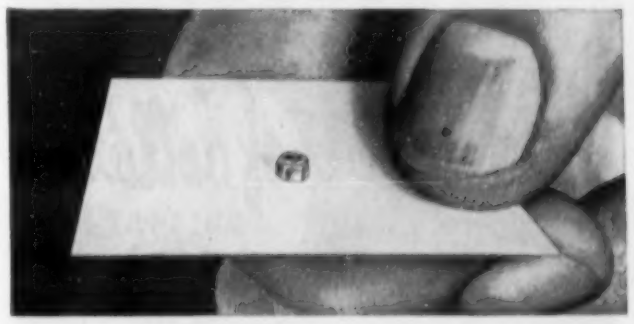
COMBINATION STARTERS — Save installation time and wiring costs when both a magnetic starter and disconnect switch are required. Sizes 0 to 5 for motors to 200 hp.

Contact your nearest A-C representative or write Allis-Chalmers, Milwaukee 1, Wisconsin for Bulletin 14B7132A.

ALLIS-CHALMERS A-C A-4360

If you write maker identify as IEN - 8029

Miniature ELASTIC STOP® nuts down to 0.109" across flats



NOW, miniature ELASTIC STOP nuts are available in sizes #0 through #4 in both SAE fine thread and USS coarse series—for special applications, such as electronics equipment and instruments. Smaller than any other self-locking nut they maintain a precise adjustment whether tightened against a seating surface or positioned at any point on a threaded member.

Nylon inserts make them self-locking, vibration-proof and re-usable, like all ELASTIC STOP nuts. They are simpler and less expensive to assemble than double nuts or soldered units.

WRITE FOR design information on Miniature Nuts and other special and standard ESNA fasteners. Address Dept. N38-753.

ESNA

ELASTIC STOP NUT CORPORATION OF AMERICA
2330 Vauxhall Road, Union, N. J.
DESIGN HEADQUARTERS FOR SELF-LOCKING FASTENERS

If you write maker identify as IEN - 8030

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line ...provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

K KELLER TOOLS

Send for **illustrated descriptive bulletin and detailed information**

Keller Tool Company
1329 Fulton St.
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 8031

Will your Watchman be ALERT to handle this unexpected weekend "*customer*"?

A GUARDSMAN pays for itself in lowered insurance premiums. Write for free folder.

The Detex GUARDSMAN Watchclock *keeps* watchmen on their toes. Gives unbroken mechanical supervision you can trust *7 days a week.*

DETEX
PATROL ALERT ECO NEWMAN GUARDSMAN
WATCHMENS CLOCKS
DETEX WATCHCLOCK CORPORATION
Dept. E-7
76 VARICK STREET, NEW YORK 13, N. Y.
Sales and Service in All Principal Cities

If you write maker identify as IEN - 8032

ideas...worth

hundreds of dollars

for the price of a 3¢ stamp

Here is a collection of interesting case histories of production and maintenance problems which were solved with almost unbelievable ease and speed by the unusual use of a hose clamp to fasten things together and "Hold 'em tight" in place. Send for Clampways Ideas" while you're thinking about it*.

"The Sign of a Good Hose Clamp"

PUNCH-LOK *Company*

*or get your copy from your near-by Punch-Lok distributor

do it now

Punch-Lok Company
Dept. B, 321 North Justine Street
Chicago 7, Illinois

send me Clampways ideas FREE

Firm Name_____
My Name_____ Title_____
Address_____
City_____ State_____

4962

NEW LITERATURE—*Continued*

If you write maker identify as IEN - 0657

VARIABLE SPEED DRIVES . . Tabloid-size picture bulletin shows 60 applications on motor-equipped variable-speed and reducer drives. Bulletin 185, 8 pages. Sterling Electric Motors, 5401 Telegraph Rd., Dept. IEN, Los Angeles 22, Calif.

If you write maker identify as IEN - 0658

ELECTRONIC PRODUCTS . . Small insulated chokes resemble resistors in appearance. Inductance, approximate "Q" vs. frequency, ratings in 4-page Bulletin H-1. International Resistance Co., 401 N. Broad, Dept. IEN, Philadelphia 8, Pa.

If you write maker identify as IEN - 0659

FASTENINGS . . Wood screws in steel, brass, bronze, stainless steel, aluminum; slotted and Phillips head; decorative and rust-resistant finishes. Catalog and price list, 12 pages. Southern Screw Co., Dept. IEN, Statesville, N. C.

If you write maker identify as IEN - 0660

FASTENINGS . . Sel-Lok drive pins are slotted tubular members that hold by spring action. They range from .062 to .500 in. in diameter, $\frac{3}{16}$ to 4½ in. in length. Suggestions on use in 4-page Bulletin 2014. Standard Pressed Steel Co., Box 555, Dept. IEN, Jenkintown, Pa.

If you write maker identify as IEN - 0661

LIQUID FILTER . . Openings between a stack of metal discs form the filter element in the company's Auto-Klean filter. The stack can be rotated by hand or power to scrape off accumulated material. Catalog AK-050, 8 pages, 1 to 3,760 gpm. Cuno Engineering Corp., Dept. IEN, Meriden, Conn.

If you write maker identify as IEN - 0662

FOUNDRY EQUIPMENT . . Transite asbestos-cement sheet for core plates, slip jackets, form driers is light, corrosion-resistant, warp resistant, strong. Folder PP-31A, 4 pages. Johns-Manville, 22 E. 40th St., Dept. IEN, New York 16, N. Y.

If you write maker identify as IEN - 0663

FUSES . . Current-limiting design of Type-CLF fuse protects electric equipment beyond the fuse in event of a short circuit. Ratings are 250 and 600 volts. Bulletin 16-74, 8 pages, tells how to select. General Electric Co., 1285 Boston Ave., Dept. IEN, Bridgeport 2, Conn.

If you write maker identify as IEN - 0664

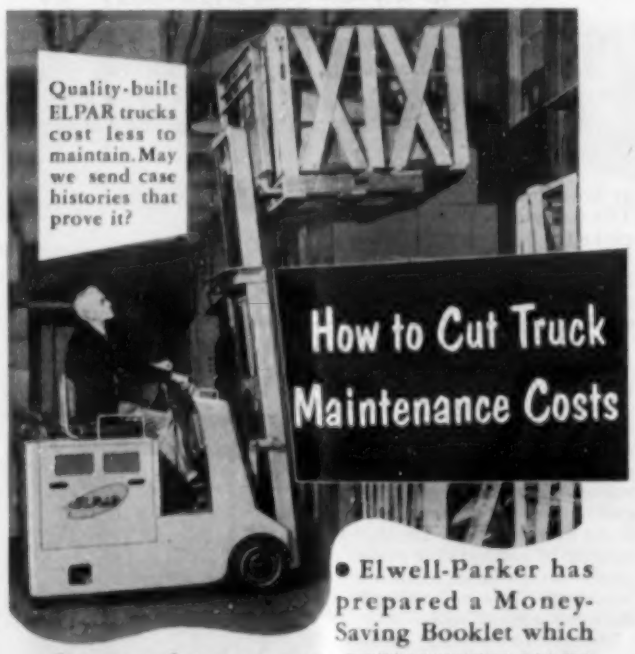
LIQUID LEVEL GAGES . . Water gages and columns for boiler pressures of 400 to 2,500 lb. are in 20-page Bulletin WG-1812-54 along with suggested arrangements on remote reading such as a TV camera. Yarnall-Waring Co., 122 Mermaid Lane, Dept. IEN, Philadelphia 18, Pa.

If you write maker identify as IEN - 0665

VACUUM GAGES . . Indicating thermocouple gage, range from 0 to 1,000 microns, also a recording gage and an ionization gage. Televac Catalog, 8 pages. George E. Fredericks Co., Anne & Philmont Road, Dept. IEN, Bethayres, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8034



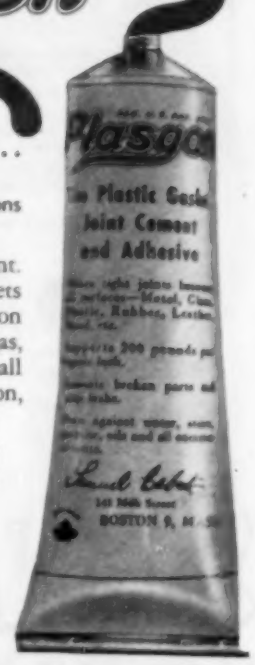
How to Cut Truck Maintenance Costs

• Elwell-Parker has prepared a Money-Saving Booklet which shows you how to set up a PREVENTIVE MAINTENANCE PROGRAM. Our new 8-page folder, describing the program in detail, is available free and without obligation. Samples of truck maintenance forms, that you may copy, are included. *Write Now for Your Copy.*

THE ELWELL-PARKER ELECTRIC COMPANY
4063 St. Clair Avenue Cleveland 3, Ohio

If you write maker identify as IEN - 8035

Leaks haven't a chance WITH *Plasgon*



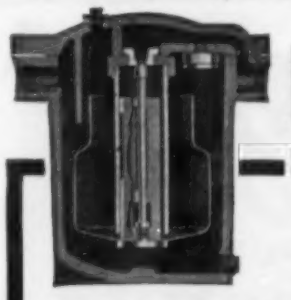
Here's the perfect joint sealer for . . .
- Emergency gaskets
- All threaded and flanged connections
- Fuel line joints

Plasgon is an adhesive plastic cement. Apply from the handy tube. It sets quickly . . . a big time-saver. Plasgon is impervious to oil, kerosene, gas, water, steam, ethylene glycol and all common solvents. Resists vibration, not affected by heat up to 350° F.

Write for free sample, specifying whether you want black or white.

Samuel Cabot
SAMUEL CABOT INC.
733 Oliver Bldg., Boston 9, Mass.

If you write maker identify as IEN - 8036



illinois STEAM TRAP

Simple—has only two moving parts

Valve Stem Travels Independent of Bucket—no other trap has this feature.

Instantaneous Valve Action—either wide open or tight shut—will not dribble on partial closing of valve under slow condensation rates.

Wire Drawing Impossible—valve has snap action.

Simple—moving parts are valve and bucket.

Cannot Air Bind—vents air continuously without loss of steam.

Cannot Blow Steam—always water sealed.

Surface Discharge—flushes out all grease and sludge.

Valve Seat—of special alloy, fully guaranteed.

Inspection Easy—without disturbing piping.

Works Equally Well on All Fluids—compressed air lines, air separators, air aftercoolers.

Write for Bulletin 35

Consult us on your requirements

illinois ENGINEERING ILLINOIS ENGINEERING COMPANY
2035 SOUTH RACINE AVENUE, CHICAGO 8
DIVISION OF AMERICAN AIR FILTER COMPANY, INC.

If you write maker identify as IEN - 8037

what are your hardness testing needs?

portability?
Only 3" high, weighs 30 ozs.!

versatility?
Tests any size, shape, type metal!

speed?
One easy motion gives direct reading

easy to use?
Just press handgrips, read dial!

production?
A test a minute with the bench adapter

Each instrument is individually calibrated. Available in Newage Scales corresponding to:

Rockwell "A" 35-75 Scale
Rockwell "B" 5-100 Scale
Rockwell "C" 6-70 Scale
Rockwell "15N" 70-95 Scale
Brinell Medium 100-440 Scale
Brinell Low 50-260 Scale

ERNST PATENT 2536632.

Thousands in use in industry, labs, government agencies. Write today for full descriptive literature, Booklet 610

NEWAGE INTERNATIONAL
portable metal hardness testers
NEWAGE INTERNATIONAL, INC., 235 E. 42 ST., N.Y., N.Y.
LOS ANGELES, CALIF.: 11775 SAN VICENTE BOULEVARD
TORONTO 14, ONTARIO: 3 BESTOBELL RD., QUEEN ELIZABETH WAY

If you write maker identify as IEN - 8038

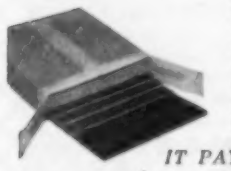
ISOMODE* PADS...

money-saving "shoes" for busy machine feet!

Now you can successfully isolate vibration, muffle plant noise, and cut down maintenance bills by using low-cost Isomode Pads.

Made of DuPont Neoprene, these pads resist oil and water, actually last for years. In thousands of installations, they have already proved their ability to swallow up troublesome machine shock and vibration. Even that of giant punch presses.

Installation is quick, easy. And there's no waste – you use only as much as you need. Simply cut an Isomode Pad to size and install under equipment. Results: Machines stay put without bolting, floors and building remain undamaged, working conditions are improved, and machine maintenance is cut.



Try a package of Isomode Pads and see. Write for full details and price list. **Trade Mark*

IT PAYS TO KEEP A PACKAGE ON HAND

THE MB MANUFACTURING COMPANY, INC.
1064 State Street, New Haven 11, Conn.

If you write maker identify as IEN - 8039

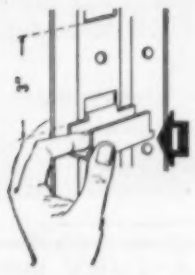
NEW

SIMPLICITY and FEATURES

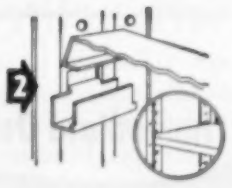
BORROUGHS *UNITIZED *flexi* STEEL SHELVING

*every unit is a unit within itself!

Here's a revolutionary idea in steel shelving. It's by far the most flexible shelving on the market. Shelves can be adjusted independently in a unit without disturbing shelves in adjacent units —no tricky tools or gadgets needed—see illustrations 1-2-3.

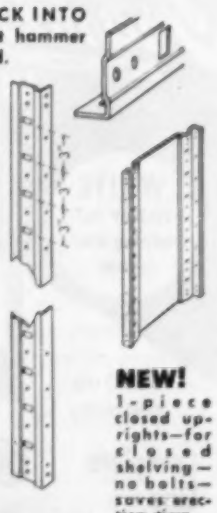


INSERT SHELF SUPPORT BRACKET—no studs or bolts—no nuts or lock washers to fumble with.



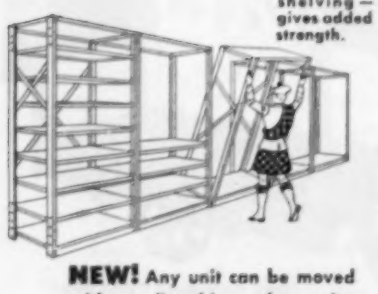
TILT SHELF INTO SUPPORT BRACKET and you're finished.

PRESS SHELF LOCK INTO POSITION—a slight hammer tap and it's locked.



NEW! Borroughs shaped post —for open shelving— gives added strength.

NEW! 1-piece closed uprights—for closed shelving— no bolts— saves erection time.



NEW! Any unit can be moved without disturbing other units.

send for Catalogue

BORROUGHS MANUFACTURING COMPANY
A SUBSIDIARY OF AMERICAN METAL PRODUCTS COMPANY OF DETROIT
3002 NORTH BURDICK amp KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 8041

BUILDING .. Prefabricated steel made in 40, 50 and 60 ft. clear spans

Source: DRESSER-STACEY COMPANY
875 Michigan Ave., Dept. IEN, Columbus 8, Ohio

Specified length in 20 ft. increments

Utilimaster is a new rigid frame prefabricated steel building employing standard siding and roofing materials including the company's own heavy gage galvanized Deep-Rib sheet steel aluminum sheet and Cemesto panels. The basic steel frame can be employed in combination with concrete block or brick walls, precast concrete walls and other building materials. A typical 50 by 100-ft. building can be erected in 10 working days.

Parts are shipped fabricated and cut to size so no field cutting, burning or welding is required. The light weight rigid bents are lifted into position on hinged base shoes with a light duty crane. Roof sheets and insulation are installed from above. Interior structural members are shop painted. Exterior steel parts are galvanized. The building employs standard glass fiber bat-type insulation. Roof insulation is supplied in rolls pre-cut to length and is installed over the roof purlins and brace wires prior to application of the roof sheet. Wall insulation attaches by means of metal clips. Standard wall height is 14 feet.

If you write maker identify as IEN - 8042

TUMBLING .. Enclosed assembly, two barrels and variable speed drive

Source: ALMCO SUPERSHEEN
Dept. IEN, Albert Lea, Minn.

For small parts

Model DBO-1A designates new assembly of the company's Speed Finishing tumbling equipment in which two barrels are mounted on a common shaft. Drive is by a motor and variable pitch transmission for rotating speed between 12 and 50 rpm. The motor rates ½ hp. The barrels measure 16 in. across their octagon flats by 8 in. in axial length. Each holds 1 cubic foot.

Rotation can be observed through screened openings in the hinged housing cover. Work is charged and discharged after removing cam operated aluminum doors on the individual barrels. The work and finishing media discharge to screen covered drawers that slide in and out of the front of the housing. The screens separate the work from the media. The barrels can be specified plain or with neoprene lining. Overall housing dimensions are 36 by 32 by about 51 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8043

The New REED SERIES S
ADJUSTABLE GUIDE RATCHET THREADERS
with self-starting chip-ejecting dies

CAPACITIES:
⅛" to 1"
¼" to 1¼"
½" to 2"

• *Cuts clean true threads for tight joints . . everytime.*

- Light, compact and long-lasting.
- Simpler, faster and easier to use, especially in close quarters.
- No Lead Screw. Reed chip-ejecting, double-threaded thread dies start without pushing and cut clean threads with minimum effort.

REED MANUFACTURING COMPANY
ERIE • PENNSYLVANIA • U. S. A.

If you write maker identify as IEN - 8044

Resistors' drying time reduced from days to minutes with Cyclone Belts

• This manufacturer of resistors for radio and television sets formerly waxed all wires by a hand-dip method and hung them in racks to dry. It took several days. Now a Cyclone Flex-Grid Conveyor Belt speeds the resistors through an oven and brings them out thoroughly dried, ready for immediate use. This results in increased production, faster operations, lower costs.

At certain points in your own production line, the right Cyclone Conveyor Belt may save you time and money. One of our experienced engineers will gladly consult with you. And we will send you, without obligation, our free, up-to-date Catalog 85. Just write to Dept. C-74.

USS CYCLONE
METAL CONVEYOR BELTS
SPIRAL WOVEN • FLAT WIRE • FLEX-GRID

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

UNITED STATES STEEL

If you write maker identify as IEN - 8045

For Precision Between Centers

EX-CELL-O CENTER LAPPING MACHINES

Meeting today's precision standards requires accurate center holes in the work. Ex-Cell-O Center Lapping Machines correct inaccuracies of center holes that affect the quality of all subsequent operations performed between centers. Fully described in Bulletin 40271—yours for the asking.

51-11

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

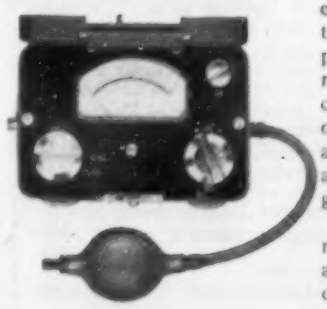
XLO

If you write maker identify as IEN - 8046

NOW...

. . . you can get immediate, accurate, direct readings of gas concentrations up to 100% by volume

THE M·S·A GASCOPE



The single, dual-scale meter of this new instrument indicates the full range of gas concentrations—0 to 100% of the lower explosive limit on one scale—0 to 100% of combustible gas present on the other. This dual-range, direct reading instrument, controlled by the simple turn of one selector switch, is your new answer for accuracy, speed, and simplicity for tracing any gas leakage to its source.

Light, comfortable, demands no special training. A variety of accessories for all sampling conditions. Write for details.

MINE SAFETY APPLIANCES CO.
201 North Braddock Ave.
Pittsburgh 8, Pa.
76 Branch Offices in the United States

MSA SAFETY EQUIPMENT HEADQUARTERS

If you write maker identify as IEN - 8047

AGASTAT
trademark
pneumatic time delay relays

- Light, versatile, dependable
- Unaffected by voltage variations
- Instantaneous recycling
- Adjustable timing from 0.1 second to 10 or more minutes
- Available in models which offer:

delays on energizing and de-energizing — two step delays
manually actuated time delay switch — remote push button control

Write our application engineers for help with your timing problem. Address Dept. A13-72.

AGA DIVISION
Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth, New Jersey
Pioneers in pneumatic timing.

If you write maker identify as IEN - 8048

REPAIR CONCRETE PLANT FLOORS by SAWING BEFORE BREAKING

. . . with a Clipper CONSAW

Save up to 50% in labor and material. Saw repair patches—saw gas, water, conduit, and air line trenches in floors, runways and streets. Stops cracking and spalling—stops high maintenance costs.

. . . It's Yours on **FREE TRIAL**

Our Only Business for Nearly **20 YEARS . . . MASONRY and CONCRETE SAWING!**

The unqualified Clipper guarantee of satisfaction is backed by world wide experience, the ability to select the finest materials and the "know how" to put them together

. . . by the **MASONRY SAW Originators**

Every shape and size refractory **cut in seconds!** Perfect fitting refine jobs that last longer—cost less. A Clipper Model to fit any job—any budget. SOLD ON FREE TRIAL

MODEL HD — 15 MODELS PRICED FROM $265

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH —SEE BELOW

CLIPPER SUPERIOR DIAMOND BLADES

. . . guaranteed to . . . "Consistently Provide the fastest cut . . . at the lowest cost . . . with the greatest ease!" Clipper alone can supply every necessary metal bond . . . in over 36 specifications.

Clipper MANUFACTURING CO.
• CINCINNATI • BOSTON • WASHINGTON, D.C. • CHARLOTTE, N.C. • PHILADELPHIA • CLEVELAND • ST. LOUIS • CHICAGO • HOUSTON • AUSTIN, TEXAS • SAN FRANCISCO • ATLANTA • DETROIT • PITTSBURGH • NEW YORK • BIRMINGHAM • DENVER • LOS ANGELES • INDIANAPOLIS • ST. PAUL • MILWAUKEE • DALLAS
IN CANADA, P.O. BOX 476, WINDSOR, ONTARIO

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☐ CLIPPER MASONRY SAWS ☐ CLIPPER DIAMOND BLADES
COMPANY ____
ADDRESS ____
CITY ____ STATE ____

NEW LITERATURE —Continued

If you write maker identify as IEN - 0666

GRINDING FIXTURES . . Universal form-relieving fixture holds end-cutting and side-cutting tools to grind radial relief, axial relief or both. "Form Relieving Fixtures," 8 pages, shows typical setups. Royal Oak Tool & Machine Co., 29800 Stephenson Highway, Dept. IEN, Royal Oak, Mich.

If you write maker identify as IEN - 0667

GRINDING MACHINES . . Automatic equipment to grind gears, spline shafts, contour parts from fractions to 36 in. od. and lengths to 80 in. between centers. Bulletin, "Automatic Machines," 8 pages. Gear Grinding Machine Co., 3901 Christopher St., Dept. IEN, Detroit 11, Mich.

If you write maker identify as IEN - 0668

HEATING ELEMENTS . . Electric strip heaters, unit heaters, oven elements, immersion heaters, cartridge units, air heaters, also thermostats, switches. Pocket Bulletin B-6161, 24 pages, shows how to select them. Westinghouse Electric Corp., P. O. Box 2099, Dept. IEN, Pittsburgh 30, Pa.

If you write maker identify as IEN - 0669

HEAT TREATING . . Tempering furnace in vertical electric design includes an instrument panel and control accessories. It applies for temperature from 800 to 1,650 deg. F. Catalog TD-2-625, 20 pages. Leeds & Northrup Co., 4934 Stenton Ave., Dept. IEN, Philadelphia 44, Pa.

If you write maker identify as IEN - 0670

HOSE FITTINGS . . Quick-Lock couplings connect in half a second on air, water, gas, oil, hydraulic or steam lines for pressures to 1,500 lb. Revised 8-page Catalog 6500 also presents combinations with valves. Hose Accessories Co., 2700 N. 17th St., Dept. IEN, Philadelphia 32, Pa.

If you write maker identify as IEN - 0671

LAPPING . . Uses of gear lapping, methods of gear lapping, details on two external and two internal gear-lapping machines. Bulletin ML-54, 8 pages, Michigan Tool Co., 7171 E. McNichols Road, Dept. IEN, Detroit 12, Mich.

If you write maker identify as IEN - 0672

LATHES . . Catalog 5406, 60 pages, covers bench and floor models from 9 to 24 in. swing, turret lathes to 1 in. collet capacity, also drill presses. South Bend Lathe Works, 301 E. Madison St., Dept. IEN, South Bend 22, Ind.

If you write maker identify as IEN - 0673

FLOW METERS . . Catalog 2320, 60 pages, covers a line of indicating, recording, integrating, controlling flow meters for air, gases, liquids. It also gives information on flow approximation and equipment selection. Minneapolis-Honeywell Regulator Co., Wayne & Windrim, Dept. IEN, Philadelphia 44, Pa.

If you write maker identify as IEN - 0674

FLOW METERS . . Equipment for measurement and control of liquids and gases in process and power use includes gages, meters, controls, valves, venturi tubes. General Catalog 004, 36 pages, just released. Simplex Valve & Meter Co., 68th & Upland Sts., Dept. IEN, Philadelphia 42, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8050

FOR AIR REQUIREMENTS UP TO 640 CFM

COMPACT VERSATILE
JOY WL-80
"UNITAIR" COMPRESSORS

Avoid long runs of piping. Joy WL-80 Air Compressors can be used right where the air is needed. Their extreme compactness permits installation in very restricted area.

Eleven models range from 15 to 125 HP, produce from 81 to 641 CFM. Pressures up to 125 psi (high-pressure units to 250 psi).

Your choice of drives, too: Direct, V-Belt, Flange-mounted. Single or two stage, air-cooled, force-feed lubrication. Write for detailed Bulletin A-56.

Consult a Joy Engineer

JOY

JOY MANUFACTURING CO., OLIVER BLDG., PITTSBURGH 22, PA.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED, GALT, ONTARIO.

If you write maker identify as IEN - 8051

REALOCK FENCE

keeps your guard up

With a Realock Fence enclosing your buildings and grounds, your guard is always up against the risks of unauthorized entry.

Consult your classified telephone directory for nearest sales office or write to any of our three division offices for free estimate or catalog.

BRANCHES IN ALL KEY CITIES
THE COLORADO FUEL AND IRON CORPORATION • Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION • Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
CF&I

If you write maker identify as IEN - 8052

DO YOU KNOW WHY

Grafo **COLLOIDAL GRAPHITE**

is becoming increasingly popular for hot forging operations? Because ***Grafo*** Colloidal Graphite dispersed in a water medium does not flake, burn up or leave gum deposits.

The dry colloidal lubricating films from ***Grafo*** Colloidal Graphite dispersions protect the dies far beyond the destruction point of most oils, while at the same time permit proper metal flow . . . reduce die wear . . . produce a better finish . . . give increased production.

Let ***Grafo*** Colloidal Graphite dispersions in water, oil or other liquid mediums cure your troubles too.

WRITE US REGARDING YOUR SPECIAL PROBLEMS

GRAFO COLLOIDS CORPORATION
MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS
SHARON, PENNSYLVANIA

If you write maker identify as IEN - 8053

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880. **FACTORY-MILL & WAREHOUSE TRUCKS**

Cutting Handling Costs since 1880

WRITE *TODAY for catalog and prices*

$24.90

3000-lb capacity

Complete Line —
For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

Need more good trucks quick? Buy direct from the manufacturer and save—time AND money. Francis heavy duty, economical trucks feature strong iron work—hardwood frame—rigid construction. All carefully machine fitted. Steel rims or rubber tires.

Manufactured by
HOOSIER FENCE CO. Inc.
Dept. IEN 1701 E. 38th St., Indianapolis, Ind.

If you write maker identify as IEN - 8054

SMALL METAL STAMPINGS

Send your prints for regular or special stamping jobs to Patton-MacGuyer where specialized engineering experience and tool-making skill combine to produce stamped metal parts accurately, economically, promptly. A dependable source for over 35 years, P-M is completely equipped in an extensive modern plant for large volume production to meet the most exacting requirements. Moderate die charges; precision work; prompt service.

P-M welcomes the opportunity of working with your engineers in the initial stages of their special stamping designs when the accumulated specialized knowledge of our Technical Staff will aid them in obtaining the most efficient stamping at the lowest cost.

TERMINALS for ELECTRIC WIRES

Specializing in terminals, P-M has dies to produce over 400 different kinds of terminals. We also provide pre-soldered tandem terminals supplied on reels, with machine that attaches and solders at rates up to 1200 perfect terminations per hour. Send for catalog.

PATTON-MacGUYER COMPANY

18 Virginia Avenue • Providence 5, R. I.

If you write maker identify as IEN - 8055

an ACCO product

Campbell Abrasive Cutter

Here's a versatile cutter

• This new CAMPBELL Model 28 SEVER-ALL Abrasive Cutter has the capacity for a wide variety of cutting operations. Ideal for quick cutting of all materials in metal-working and fabricating shops. Portability feature makes it especially suitable for construction work.

Important Features Include:

1. Work clamped on both sides of cut by hand-operated, self-centering work holders.
2. Can be supplied with foot-operated treadle.
3. Time of cut is approximately 3 seconds per square inch of material.
4. Cutting wheel completely enclosed during operation except for opening to clear work. All steel construction with full safety protection for operator.
5. Lowering of guard permits accurate location of work, permits long pieces to be placed in machine without threading through. Can be supplied with work stop.
6. Capacity—Solids up to 4" x 4" square; angles and channels to 8"; tubes and pipes to 4" O.D.; 4" angles and channels and 4" O.D. pipe at 45° angles, based on use of 18" cutting wheel and 10 H.P. motor.

Write today for specifications on the new SEVER-ALL or Bulletin DH-301 on the Campbell Abrasive Cutting Method

ACCO

Campbell Machine Division
AMERICAN CHAIN & CABLE

941 Connecticut Avenue, Bridgeport 2, Connecticut

Wet and Dry Cutters and Nibblers

If you write maker identify as IEN - 8057

EXTRUDING . . Hydraulic machine employs removable material cylinders

Source: LOOMIS ENGINEERING & MFG. COMPANY
126 S. 14th St., Dept. IEN, Newark 7, N. J.

Bulletin 232A

Model 232-25 is a new 25-ton hydraulic extruding machine that can be set up in horizontal or vertical extruding positions as shown in the illustration. In both cases the machine takes a removable material cylinder so one can be loaded in the machine under pressure while another one is being filled with material.

A vacuum sealing arrangement is employed, with the removable cylinder, to push the cylinder into sealed position at both ends when the hydraulic ram is moved forward and to break this seal and disengage the cylinder so it can be lifted out, following the return stroke. The cylinders can be de-aired and compacted prior to insertion in operating position. The die and nozzle are removable from the head.

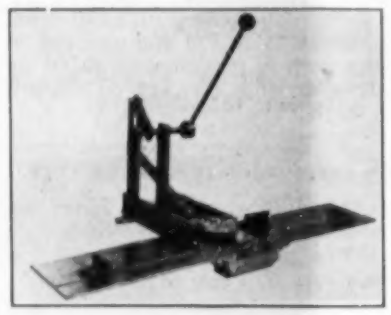
A de-airing valve is provided with the material cylinder to prevent material from entering the vacuum lines. Pressure is supplied by motor driven equipment mounted in the machine housing. Indicating gages, valves and controls are assembled on a panel on the housing side.

Two cylinder diameters are standard with the new machine. One measures 2⅜ in. and the other is 4 inches. Length in both cases is 16¼ inches. Working capacity is 63 and 179 cubic inches. Maximum extrusion pressure is 11,000 and 4,000 lb. per square inch. The machine housing measures 42 by 24 by 30 inches.

If you write maker identify as IEN - 8058

CUTTING . . Lever operated machine applies on sheet metal to 16 gage

Source: U. S. TOOL & DIE INC.
6 N. Main St., Dept. IEN, Pittsburgh 15, Pa.



Mounts on a bench

This new machine, known as the Rhodes universal notcher, will cut a square notch measuring 3 by 3 by 3 in. in a piece of mild steel to 16 gage in thickness. It can be employed for 90-deg. corner cuts, 90 and 115-deg. vees, corner and angular cuts or any other contours totaling a maximum of 9 in. in linear cutting length in the 16 gage metal. Two steel tables, 14 in. in length, each equipped with side and end stops can be set in various positions. Weight is about 50 pounds. The machine can be equipped for foot or pneumatic operation, in addition to the hand lever shown in the illustration. The company is prepared to supply various dies for specified use.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8059

ALL NEW MULTI-CLEAN F-300 VAC-BLOWER

1 MACHINE THAT DOES THE WORK OF 2

All purpose industrial vacuum cleaner does wet and dry pick-up. Lots of power for vacuuming or blowing. Detachable, portable power head and dust bag for hard-to-get-at places. Generous assortment of attachments for every cleaning need. Call your Multi-Clean distributor today or write to Dept. IE-7.

2277 Ford Parkway **MULTI-CLEAN** PRODUCTS, INC. St. Paul 1, Minnesota

If you write maker identify as IEN - 8060

Outside equipment service and repair is easier and faster with the new Quincy Model HT-325 Compressor. The compact unit can be mounted in a pick-up truck . . . supplies compressed air for cleaning, painting, lubrication and operating pneumatic tools.

Easy starting is accomplished by a pull rope or electric starter powered by the truck battery. Tank pressure is automatically maintained at from 165 to 175 p.s.i. A tank manifold provides lower pressure when required.

Quincy makes compressors in 21 models from 1 to 90 C.F.M. Write Dept. H-37 for Form 300B on industrial compressors.

Makers of the World's Finest Air Compressors

Quincy COMPRESSORS

QUINCY COMPRESSOR CO.
QUINCY, ILLINOIS
Branch Offices: New York • Philadelphia • Atlanta • Detroit • Chicago • St. Louis • Dallas • San Francisco

If you write maker identify as IEN - 8061

Make cost-reducing improvements...

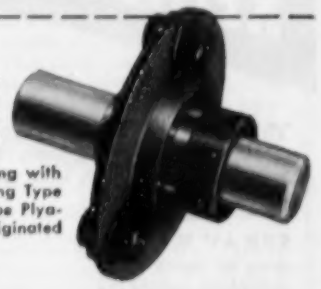
with the Fafnir Pressed Steel Line of Power Transmission Units

TYPE PB PILLOW BLOCK

A complete, low-cost unit including two-piece pressed steel housing plus Fafnir Wide Inner Ring Type Ball Bearing with Self-Locking Collar and Fafnir patented Plya-Seals. Designed for light-duty applications. Easy to install. For shaft sizes from ½" to 1¼".

THE FAFNIR FLANGETTE

Another inexpensive unit . . . for light duty applications. Over a million in use. It features pressed steel flange mountings of heavy gauge . . . a choice of either a Fafnir Wide Inner Ring Ball Bearing with Mechani-Seals or a Wide Inner Ring Type Bearing with patented, contact-type Plya-Seals. Both types have the Fafnir-originated Self-Locking Collar.



SEND FOR DESCRIPTIVE FOLDERS
The Fafnir Bearing Company
New Britain, Conn.

FAFNIR BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

If you write maker identify as IEN - 8062

Now A REAL . . . HUSKY . . . FULL SIZE SPECIFICATION SWITCH BUILT TO DO A FULL SIZE JOB CONTINUOUSLY

P&S 20AC1

IF you need switches that can be used at full rated capacity on fluorescent and incandescent loads

IF you need switches that stand up under continuous heavy duty use

IF you want to cut down replacement costs on heavy duty circuits

YOU'LL LIKE THE WAY P&S A.C. SUPER SWITCHES HANDLE THE JOB

Both 15 and 20 Amp. types can be used on 120 V. to 277 V. fluorescent and incandescent loads at full rated capacity — can be used on motor loads up to 277 V. at 80% of switch rating.

Extra large silver alloy buttons will not oxidize under constant service, keeping temperature rise (common cause of switch failure) at a minimum.

Sturdy, totally-enclosed bodies — Easy back or side wiring — built "to take it." S.P., D.P. and 3-W, Ivory and Brown, 15 and 20 Amp. types, A.C. only.

For complete information write Dept. IN

PASS & SEYMOUR INC. SYRACUSE, N. Y.
OFFICES: 71 Murray St., New York 7, N. Y.
1229 W. Washington Blvd., Chicago 7, Ill.

If you write maker identify as IEN - 8063

GET THIS NEW DRUM PUMP Idea Book!

New ideas in fluids handling

May we show you what this amazing little Fast-Flo Drum Pump has done in industry after industry?

An air-operated reciprocating pump, the 13½ lb. Fast-Flo operates on air as low as 35 PSI. It screws directly into 2" drum bung openings, or can be clamped on tank sides. *And Fast-Flo does not pressurize drums!*

Fast-Flo can transfer, agitate, dispense . . . and be used as a supply pump for applying, mixing or spraying. It handles an almost unbelievable range of materials, many as thin as isopropyl alcohol, many as thick as cookie frostings.

SEND FOR FREE COPY

GRACO Fast-Flo UNIVERSAL DRUM PUMP

One of the applications in this new Fast-Flo book may suggest a better way to handle one of your operations, saving time, labor and money. Write today!

GRAY COMPANY, INC.
71 GRACO SQUARE • MINNEAPOLIS 13, MINNESOTA
Regional Offices: New York, Philadelphia, Detroit, Chicago, Atlanta, San Francisco

If you write maker identify as IEN - 8064

NOW Spray it Clean with KELITE SPRAY WHITE and this money-saving KELITE SPRAY GUN

This amazing patented* super-cleaner removes . . . grease, oil, wax, gum, dirt, dye, ink, soap, light carbon.

SPRAY WHITE does its work with complete safety . . . free from heat, odor, fumes, solvents, fire-hazard, or danger to skin.

This remarkable chemical compound, when used according to directions, is safe on all metals, plastics, rubber, porcelain, composition, or wood.

Send for list of 200 leading American companies who have bought Kelite Spray White, and Kelite Sprayers (200 in use in one plant). Thousands of companies are saving time and money, and keeping premises and equipment sparkling clean, with this exclusive and patented Kelite development.

THE KELITE SPRAY GUN is rugged—easy to use. Polyethylene container is light, shatter-proof, holds 1 pint liquid. Send for complete description.

*U.S. Patent No. 2,381,124

Spray White MADE BY KELITE®

Service Offices in 98 American Cities and 16 Countries Abroad
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Mail Today

KELITE PRODUCTS, INC.
1250 North Main Street, Los Angeles 12, California
___ Mail free Spray White literature and list of prominent users.
___ Request free demonstration of Kelite Spray White.
NAME ____
COMPANY ____
STREET ____
CITY ____

NEW LITERATURE—Continued

If you write maker identify as IEN - 0675

NICKEL ALLOYS . . Company offers printed information on nickel alloy steels, stainless steels, nickel cast irons, brass, bronze, summarized in 20-page List "A", 1954 edition. An inquiry-forwarding form is included. International Nickel Co., 67 Wall St., Dept. IEN, New York 5, N. Y.

If you write maker identify as IEN - 0676

PAINT SPRAY BOOTHS . . Rotowash design provides suction at top and bottom of a water curtain to collect overspray and wash paint-laden air. Diagrams show how in 12-page Bulletin 4938-B. Newcomb-Detroit Co., 5741 Russell St., Dept. IEN, Detroit 11, Mich.

If you write maker identify as IEN - 0677

STEEL PALLETS . . Smooth edges and surfaces, ribbed construction for rigidity with a minimum of weight, are features of the company's steel pallets. Folder ADV-616, 4 pages, illustrates three types. Republic Steel Corp., 3100 E. 45th St., Dept. IEN, Cleveland 27, Ohio

If you write maker identify as IEN - 0678

PHOTOGRAPHING . . Plates, film and light filters for laboratory use in spectrochemistry, radiation recording, ultraviolet and infrared work, particle tracks, electron imagery. Bulletin F-1-29, 16 pages. Eastman Kodak Co., 343 State St., Dept. IEN, Rochester 4, N. Y.

If you write maker identify as IEN - 0679

FLUOROCARBON PLASTIC . . Sixteen-page technical Bulletin J-739 on fluorothene describes its physical, chemical, optical, electrical properties, its fabrication by injection or compression molding and extrusion, summarizes applications. Bakelite Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 0680

PROCESSING . . Autoclaves to pilot plants is the scope of process equipment made by the company and reviewed in new 12-page Bulletin 2439. Blaw-Knox Co., 2050 Farmers Bank Bldg., Dept. IEN, Pittsburgh 22, Pa.

If you write maker identify as IEN - 0681

METERING PUMP . . Reciprocating pump with ball check valves, hydraulic drive, handles 13 to 730 gph. per end in metering and proportioning service, pressures to 30,000 lb. Bulletin KP-54, 6 pages. Hills-McCanna Co., 3025 N. Western Ave., Dept. IEN, Chicago 18, Ill.

If you write maker identify as IEN - 0682

METERING PUMP . . Insulating compounds, waxes, cements are dispensed in measured amount by the company's pump. Range is .114 to 13.9 cc. per operation. Bulletin 2, 4 pages. Edward E. Robinson Inc., 95 Park Ave., Dept. IEN, Nutley 10, N. J.

If you write maker identify as IEN - 0683

PNEUMATIC PUMPS . . Alemite Versatal air-operated pump removes material from original container and delivers it to spray, extrude, transfer or package. Catalog 35-12, 32 pages, offers packaged assemblies to apply paint, roof coatings, caulking, adhesives, food, gear coatings. Stewart-Warner Corp., 1826 Diversey Parkway, Dept. IEN, Chicago 14, Ill.

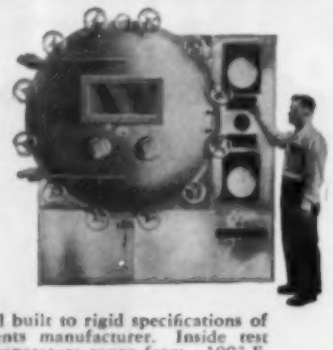
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 8066

WEBBER TRADE MARK REGISTERED

Environmental Test Chamber

Simulates Atmospheric Conditions to 100,000 ft.



Prototype unit designed and built to rigid specifications of a large electrical components manufacturer. Inside test chamber is 36" square. Temperature range from −100° F. to +250° F. 20%-95% humidity range at temperatures of +35° F. to +185° F. Assimulates 100,000 ft. atmospheric pressure in ten minutes. Completes temperature change from +250° F. to −100° F. in 45 minutes. Heat cycle uses hermetically sealed moisture proof—low density electrical elements. Chamber is equipped with electrical terminals for connection to components inside the chamber. Exclusive feature permits accurate altitude, temperature and humidity control.

Insulated with moisture proof, light weight Foamglas. Full opening, free swinging door with multipaned tempered glass hermetically bonded to stand maximum temperatures and pressures.

Other models are available from 1 cubic foot, temperatures to −200 F. and altitudes to 500,000 ft.

WEBBER designs, engineers and constructs units to meet special and all requirements.

Write for more complete information.

INDUSTRIAL FREEZER DIVISION
WEBBER MANUFACTURING COMPANY, INC
(Formerly Webber Appliance Co., Inc.)
2746 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 8067

The Choice for MARINE Applications

Federal QUALITY-CONTROLLED COAXIAL CABLES

Serve on the Seven Seas with the same dependability they bring to ALL transmission requirements of communications and industry!

AVIATION
BROADCASTING
INDUSTRY
RADAR
PULSE
EXPERIMENTAL EQUIPMENT
SPECIAL TYPES

Federal ARMORED RG TYPES
Outstanding for ruggedness, efficiency and reliability:
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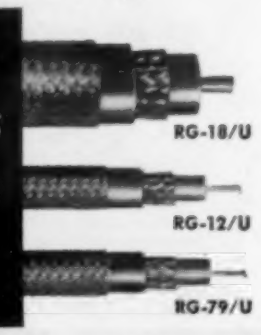
RG-12/U
RG-18/U
RG-20/U
RG-35/U
RG-74/U
RG-79/U

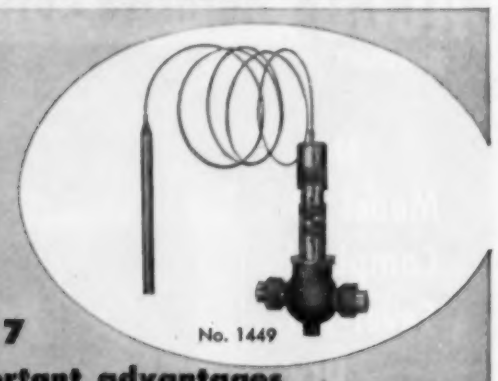


Whatever your requirements, write Dept. D-123

Federal Telephone and Radio Company
SELENIUM-INTELIN DEPARTMENT
100 Kingsland Road Clifton, N. J.

If you write maker identify as IEN - 8068

new Klipfel tank thermostat valve



with 7 important advantages

- Long life hardened metal ball inner valve
- Trouble-free one-piece metal bellows
- Built-in overheat protection
- Generous 50° adjustment range
- Quick, uniform throttling action
- Positive, tight closing
- Wide selection of temperature ranges

For dependable, low-cost temperature control, select this NEW Klipfel Thermostatic Valve . . . perfected to give the service you want with accuracy, dependability and minimum maintenance.

Klipfel VALVES, INC.
1072 Lincoln Avenue
Hamilton, Ohio

If you write maker identify as IEN - 8069

for really ACCURATE Voltage Regulation

Type 1570-A Automatic Voltage Regulator

Holds Voltage Output Constant to ±0.25%
Extra Fast Response of 0.1 Sec. per Volt
Handles up to 50 Amps. (6 KVA)

Consists of a VARIAC® continuously-adjustable autotransformer, a servomechanism circuit which samples output voltage and a servo-motor which drives the VARIAC to correct for line variations.

For really ACCURATE line voltage regulation this is the answer.

Type 1570-ALM (115 v) or Type 1570-AHM (230 v) Automatic Voltage Regulator $470.00

Write for the July 1954 G-R EXPERIMENTER for Complete Details

GENERAL RADIO Company
275 Massachusetts Avenue, Cambridge 39, Mass., U.S.A.
8055 13th St., Silver Spring, Md. WASHINGTON, D.C. 90 West St. NEW YORK 6
920 S. Michigan Ave. CHICAGO 5 1000 N. Seward St. LOS ANGELES 38

If you write maker identify as IEN - 8070

NOW!

ONE TORCH HANDLES ALL YOUR JOBS!

AIRCO®

NEW AIRCO JET MIXER

completely stabilizes flame of the 800 Torch

NEW AIRCO 2800 CUTTING ATTACHMENT

for 800 Torch cuts steel up to 8" thick!

New Airco Jet Mixer provides perfect flame stability with all gas flows, within a welding and heating tip size range of 0 to 14 inclusive. Redesigned Airco 2800 heavy-duty cutting attachment takes Airco standard cutting torch tips . . . cuts steel up to 8" thick! Medium-duty attachment available for lighter service. Send for your free copy of Catalog 818—"Hand Torches for Cutting and Welding."

AIR REDUCTION
60 E. 42nd Street
New York 17, N. Y.

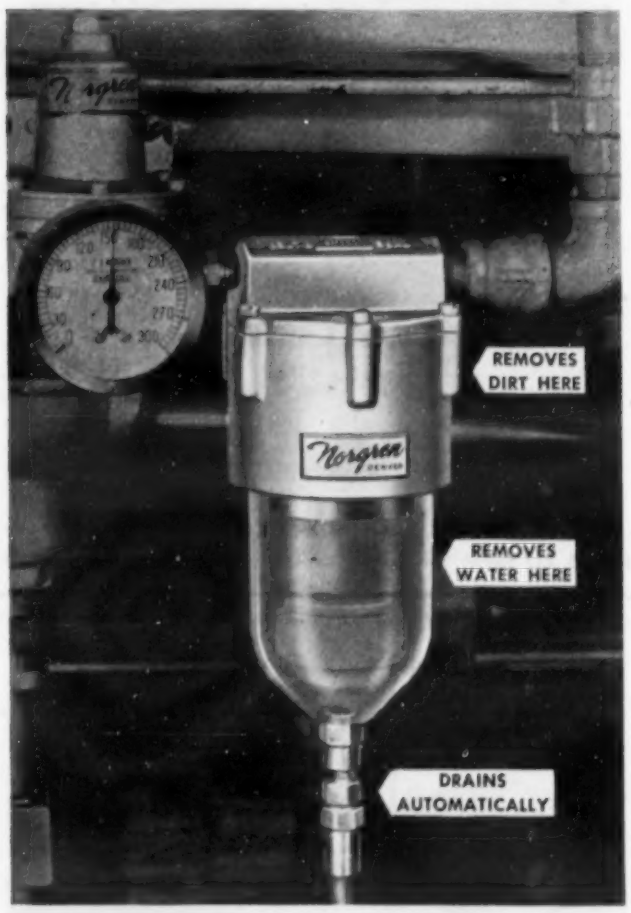
Foreign subsidiaries:
Air Reduction Canada Limited
Cuban Air Products Corporation

Divisions of Air Reduction Co., Inc.
Air Reduction Sales Co.
Air Reduction Magnolia Co.
Air Reduction Pacific Co.
Represented internationally by Airco Company International

at the frontiers of progress you'll find

If you write maker identify as IEN - 8071

PROVED PROTECTION for AIR EQUIPMENT . . . with *Norgren* AUTOMATIC-DRAIN FILTER



The new NORGREN AUTOMATIC-DRAIN FILTER operates automatically, whether air pressure is constant or fluctuating, whether or not air is flowing...assuring clean, dry air, without attention.

Performance data prove its efficiency—***100% water removal*** up to flow of 20 cfm, 90% at flow of 30 cfm... at 80 psi primary pressure and flow of 35 cfm ***pressure drop across filter is only 1 psi.***

WRITE FOR NEW CATALOG NO. 600

PIONEER AND LEADER IN OIL FOG LUBRICATION FOR 26 YEARS

Norgren C. A. CO.
3432 So. Elati, Englewood, Colo.

VALVES • FILTERS • REGULATORS • LUBRICATORS
HOSE ASSEMBLIES

If you write maker identify as IEN - 8073

IDENTIFYING . . Plastic badge to carry printed name of employee

Source: ACME LAMINATING & PLASTICS CO.
1315 E. 8-Mile Road, Dept. IEN, Hazel Park, Mich.

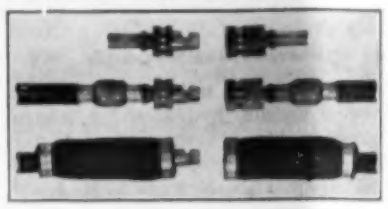
Made to order

Two **circles** of laminated plastic, 2¼ in. in diameter, are riveted together to make up this new badge. Between the two is a paper circle that can be printed with the name and other identification of a worker prior to final riveting. The rear plastic piece is clear. The one at the front can be laminated to carry a specified design above and below the clear central space. The rivets can be drilled out and the badge taken apart if a name is to be changed. The plastic will not scratch. It is comparable to metal in badge cost.

If you write maker identify as IEN - 8074

WELDING . . Cable connector for quick application in arc circuit

Source: ERICO PRODUCTS INC.
2070 E. 61st Place, Dept. IEN, Cleveland 3, Ohio



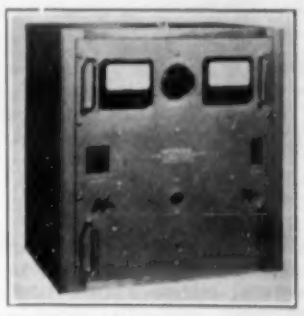
Replaceable studs

Caddy Taper-Lok is a new positive locking connector consisting of male and female sections and shanks for permanent connection on the ends of a welding cable by the company's Cadweld-ing process. The two parts join with a taper fit and bayonet lock that cannot pull apart in service but that can be disconnected readily. The current carrying parts are covered with rubber insulation banded in place. Connector capacity is 500 amperes.

If you write maker identify as IEN - 8075

TESTING . . Magnetic power supply rates 30 amp. at 10 to 40 volts dc.

Source: PERKIN ENGINEERING CORP.
345 Kansas St., Dept. IEN, El Segundo Calif.



No tubes

Magnetic amplifier takes the place of electronic tubes or a selenium rectifier in this new Type MR 1040-30 test equipment. Operation is on 110-volt ac., connecting at a terminal strip in the rear. Output is at Superior 5-way terminals at the front and a Jones strip on the rear. Assembly is in a cabinet for a 19-in. rack panel. Dimensions are 22 by 15 by 23 inches. Instruments include 4½-in. ammeter and voltmeter. Weight is about 175 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8076

Summer or Winter . . .

WING REVOLVING UNIT HEATERS Bring Comfort to Your Employees . . .

The slowly revolving outlets of the Wing Revolving Unit Heaters keep the air in constant, gentle motion, during any season of the year. The effect on the worker is stimulating and pleasant. Plants equipped with Wing Revolving Unit Heaters are satisfied productive ones. Why not investigate today?

The moving streams of heated or cooled air slowly circulate. The velocity and constantly changing direction of flow cause the air to find its way to any given point.

L. J. Wing Mfg. Co. 160 Vreeland Mills Rd., Linden, N.J.

If you write maker identify as IEN - 8077

Hammond 1" FLEXIBLE BELT GRINDER

MODEL F-1 WITH DUST COLLECTOR

Here is the answer to costly hand filing and costly grinding, polishing and deburring. Deep throat opening of 10½" permits finishing of irregular shapes and hard to get at areas.

Low in cost, but built up to Hammond standards. Not a "home workshop" tool.

You will be AMAZED at the uses you will find for the F-1.

Clip this ad to your letterhead today. Catalog and price list will be sent at once.

Hammond Machinery Builders INC.
1607 DOUGLAS AVENUE • KALAMAZOO MICHIGAN

If you write maker identify as IEN - 8078

HERE'S WHAT YOU WANT TO KNOW about the most sensitive and accurate thermostatic control

Catalog 400 is a reservoir of late and authoritative information about modern thermostatic control. It gives full data on the Fenwal THERMOSWITCH® unit, the control with the single-metal shell which expands or contracts with temperature variation. This shell itself activates the electrical contacts — its response is instantaneous. The Fenwal THERMOSWITCH control is widely used in the newest type aircraft where control must be quick, positive and accurate. It is also widely used throughout industry for temperature regulation in machinery and processing equipment and to control variables of many kinds where temperature is a factor. It is so economical it can be used anywhere.

You should know more about this most modern of thermostatic controls. Our engineers are glad to work with yours on special projects. No charge for Catalog 400. Write **Fenwal Incorporated, 77 Pleasant St., Ashland, Mass.**

Fenwal **THERMOSWITCH®**
Electric Temperature Control and Detection Devices
SENSITIVE...*but only to heat*

If you write maker identify as IEN - 8079

By using high-speed RAMSET SYSTEM for anchoring into steel or concrete, aircraft builders Glenn L. Martin Company slash maintenance costs at their Baltimore plant. They fasten steel rails, erect security fences, lay wood floors, install electrical services and make many day-by-day repairs. Not only do they reduce costs, but they finish the work 15 times as fast as by old-fashioned methods, to keep production rolling.

Ask your RAMSET dealer or write us for details on how you can make substantial savings in time and money, in new construction, maintenance or modernization with fast, easy, economical RAMSET SYSTEM.

Ramset Fasteners, INC. RAMSET DIVISION OLIN INDUSTRIES INC.
12143 BEREA ROAD • CLEVELAND 11, OHIO

FIRST IN POWDER-ACTUATED FASTENING

If you write maker identify as IEN - 8080

✓ OFF SHELF DELIVERY!
✓ EXTRA HIGH SAFETY FACTOR!
✓ DEPENDABILITY . . . backed by 38 Years of Know-How!

NEW T-J

Spacemaker AIR CYLINDERS

Streamlined design of the new T-J Spacemaker *eliminates tie rods . . . saves up to 40% in mounting space!* It's performance-proved . . . *super rugged* with extra high safety factor . . . solid steel heads . . . heavy wall, precision honed, *hard chrome plated,* seamless steel body . . . leakproof cylinder head to body construction . . . heavy duty, hi-tensile, *hard chrome plated* piston rod.

Available with the new T-J Super Cushion Flexible Seals which insure positive cushion with automatic valve action for fast return stroke. Many standard sizes and styles . . . for pushing, pulling, lifting, clamping or control jobs. T-J dependability. Write for bulletin 454. The Tomkins-Johnson Co., Jackson, Mich.

T-J TOMKINS-JOHNSON

If you write maker identify as IEN - 8081

Kill the ROOTS and you kill the WEEDS!

NEW DOLGE N P WEED-KILLER

—Can be used with confidence by anyone. Kills *all* vegetation—RESULTS APPARENT IN A FEW DAYS. Spray, sprinkle or use as dry powder—"built-in" wetting and spreading agent works fast by wetting waxy surfaces of plants and inducing penetration into leaves, stems, roots. Non-inflammable, non-volatile, non-corrosive.

DOLGE SS WEED-KILLER

—WHERE NO VEGETATION IS DESIRED. Tends to sterilize the soil so that wind-blown seeds cannot germinate.

DOLGE E.W.T. 40-2, 4-D SELECTIVE WEED-KILLER

—*Will not harm good lawn grasses,* but kills dandelions, plaintain and other broad-leaved noxious plants in turf.

Write for Dolge booklet on chemical weed control, and see your DOLGE SERVICE MAN.

Ask about SOLEXTO
Kills grubs of turf insects —one application protects lawns for years!

Dependable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 8082

Now—Lock Your Feed Rates to Protect Machines . . . Reduce Costs with the CROSS Flow Control Lock!

Only authorized personnel carry a key for the Cross Flow Control Lock! They set machine feed rate, then lock it.

Easy to install. Just remove valve nameplate and adjusting lever, reinstall over lock mounting plate.

Available for Vickers ¼" flow control valves and remote control panels.

For full details, write Dept. A47.

- Eliminates Tampering
- Stops Costly Shutdowns
- Prevents Tool Abuse and Breakage
- Protects Machines Against Overloads
- Reduces Maintenance Costs

Established 1898
THE CROSS CO.
DETROIT 7, MICHIGAN

NEW LITERATURE—Continued

If you write maker identify as IEN - 0684

CRANE RAILS . . Runway rail sections from 104 to 175 lb. and T-rail from 12 to 175 lb. are offered, both new and relaying. Bulletin C-1971, 4 pages. L. B. Foster Co., Box 1647, Dept. IEN, Pittsburgh 30, Pa.

If you write maker identify as IEN - 0685

O-RING SEALS . . How and where to use O-rings for static and dynamic seals is described in 12-page Bulletin 283 with information on sizes, groove dimensions, recommended materials by service, diagrams on what happens under increasing pressure. Goshen Rubber Co., Dept. IEN, Goshen, Ind.

If you write maker identify as IEN - 0686

O-RING SEALS . . Chemiseal synthetic-rubber O-rings and Chem-O-Green teflon-plastic backup rings to use in combination for hydraulic pressures to 1,500 lb. and above. Bulletin OB-1152, 8 pages, just released. United States Gasket Co., Box 468, Dept. IEN, Camden 1, N. J.

If you write maker identify as IEN - 0687

STAPLING MACHINE . . Retractable anvils are employed in the Staple Knight machine to clinch the staple legs in a fibre-board carton. Bulletin K-701, 8 pages. International Staple & Machine Co., 809 Herrin St., Dept. IEN, Herrin, Ill.

If you write maker identify as IEN - 0688

STORING . . Insulated containers to hold liquefied gases such as air, oxygen, nitrogen, helium, hydrogen for laboratory use, bulk storage, shipping. "Low Temperature Apparatus" catalog, 16 pages, includes a gas-properties chart. Hofman Labs., 219 Emmett St., Dept. IEN, Newark 5, N. J.

If you write maker identify as IEN - 0689

PERFORMANCE TESTING . . Cold cabinets for equipment testing at temperatures to minus 150 deg. F., also liquid chillers for process use. Data sheets C, F and LP, 2 pages each, also 4-page Bulletin 11 on cold-processing of metals. Conrad Inc., 52 W. 4th St., Dept. IEN, Holland, Mich.

If you write maker identify as IEN - 0690

TEXTILE FIBERS . . Rayon, acetate, nylon, Orlon, Dacron, Teflon fibers are offered for applications such as tires, filter fabrics, rope, belts, hose, non-woven felt, reinforced plastics. Bulletin A-7680, 24 pages. E. I. du Pont de Nemours & Co., 2518 Nemours Bldg., Dept. IEN, Wilmington 98, Del.

If you write maker identify as IEN - 0691

THERMOMETERS . . Multi-angle adjustable mounting is one of many Gotham thermometers in 16-page Catalog 101. These are glass-tube red-reading design to 950 deg. F. United States Gauge Div., American Machine & Metals, Dept. IEN, Sellersville 70, Pa.

If you write maker identify as IEN - 0692

HAND TOOLS . . Small tools for instrument makers, jewelers, watchmakers include tweezers, pliers, loupes, files, lathes, burs. "Precision Tools," 36 pages, originally issued in 1949 to watchmakers, now offered for industry. Swartchild & Co., 29 E. Madison St., Dept. IEN, Chicago 2, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 8083

2 STEPS TO STOP RUST!

To save time and costly labor, and get a better surface for paint: (1) Wire brush or scrape; brush on Tropical Rust Remover and simply wipe off loose rust; remaining rust is neutralized; (2) Seal out rust-breeding moisture with long-lasting, paint-anchoring ACB Primer. Paint jobs last longer. You save in repainting and labor over the years!

FREE! Your business letterhead request brings money-saving facts on effective rust removal; long-lasting paint jobs!

THE TROPICAL PAINT & OIL COMPANY
1126-1272 W. 70th • Cleveland 2, Ohio
HEAVY-DUTY MAINTENANCE PAINTS SINCE 1882

If you write maker identify as IEN - 8084

THE Sutton MOTOR DRIVEN PRESSURE BLOWER

THREE SIZES ¼, ½, 1 H.P.

USE FOR
- EXHAUSTING
- DUST
- SMOKE
- FUMES
- VAPOR
- FORGE BLASTING

CONVEYING COTTON, WOOL, SHAVINGS
COOLING AND DRYING

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY, CENTRIFUGAL TYPE. Direction of discharge may be changed to any of eight 4 dgree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

WRITE FOR LITERATURE AND PRICES

Sutton Manufacturing Corp.
126 W. WILSON AVENUE NORFOLK, VIRGINIA

If you write maker identify as IEN - 8085

ENGRAVED Vinylite STAMPS Are better than rubber 3 ways

SuperSanitas FABRIC WALL COVERING

ENGRAVED Vinylite IS ACID PROOF

Acid etching inks, used for permanent stamping on metal and all non-porous surfaces will eat away at rubber. Vinylite resists this action . . . gives longer life by far.

ENGRAVED Vinylite STAMP DIES GIVE RAZOR-SHARP IMPRESSIONS EVERY TIME

Opaque inks will clog shallow rubber stamp faces rapidly. Our deep-molded engraved VINYLITE stamp faces have more than three times the depth of ordinary rubber stamps. Markings always remain super sharp . . . the clearly identifying mark that distinguishes and labels your product of quality.

ZK

ENGRAVED vinylite STAMP DIES HAVE CUSHION-LIKE RESILIENCE

Our VINYLITE molding process includes a timed curing that imparts to this versatile plastic all the elasticity of rubber. Resilient VINYLITE STAMP DIES resist abrasive action, conform to irregular surfaces . . . and last much longer!

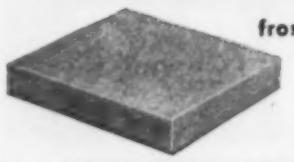
Engraved Vinylite Stamp Dies are adaptable to any automatic or hand marking device. They can be used to stamp on every surface, metal, wood, fabric, paper, plastic, etc.

+Mallory EMPLOYER 5-53

KRENGEL MANUFACTURING CO., INC.
Dept. B 227 Fulton Street, New York 7, N. Y. • Tel. CO 7-5714

If you write maker identify as IEN - 8086

Armstrong's VIBRACORK CUSHIONS VIBRATION



from Hydraulic Presses, Pumps, Compressors, and many other types of Machinery and Equipment

. . . ACTUALLY FLOATS THE LOAD ON MILLIONS OF AIR CELLS!

Vibracork is a resilient machinery isolation cork plate made of pure cork granules, compressed and baked under pressure.

Convenient to stock — Standard sheets, 12" x 36"; Standard density 2" and 3" thick; Heavy density, 1", 2" and 3" thick.

Easy to use — Can be cut to size on the job with an ordinary hand saw.

Loading range — Standard density, 1500# to 4000# per. sq. ft.; Heavy density, 5700# to 8500# per. sq. ft.

Availability. — Immediate delivery. Korfund is sole distributor for the United States.

For installation data and further information, ask for Bulletin VC-500.

THE KORFUND CO., INC.
KORFUND VIBRATION CONTROL — SPRINGS RUBBER CORK
48-35 E. Thirty-second Place • Long Island City 1, N. Y.

If you write maker identify as IEN - 8087

Whether Your Liquid Measuring Problem Involves Gallons . . . .

or Barrels

or Tank Cars . . . .

THE *Fluidometer* SYSTEM

—with its exclusive automatic reset, gives accurate and completely automatic batching of either light or heavy liquids.

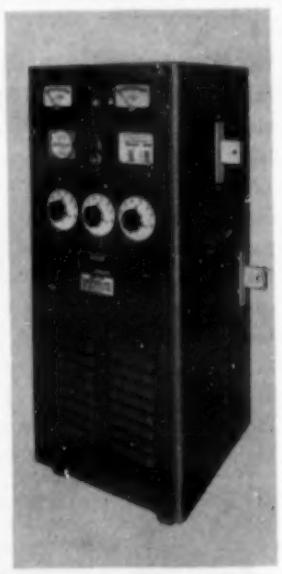
Write for Bulletin FI-49

HETHERINGTON & BERNER INC.
725 Kentucky Avenue • Indianapolis 7, Indiana

If you write maker identify as IEN - 8088

Rectifiers with many advantages

FOR METAL FINISHERS



Unichrome Rectifiers for plating and anodizing deliver steady current with less than 5% ripple. Stack assemblies "float" with flexible connections for protection against vibration. They're also protected against corrosive fumes. Stacks and a special updraft fan are designed to give effective protection against overheating. Delivered completely wired, Unichrome Rectifiers save installation headaches. Available in all outputs, the units are conservatively rated for longer life. Bulletin UR-2 gives full details on features.

Acidproof heating and cooling coils

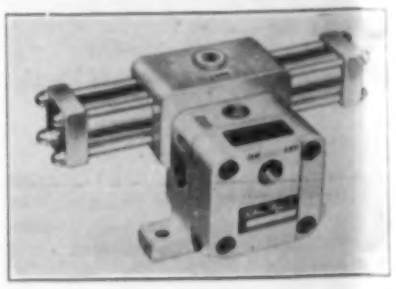
No common acid plating, pickling, or electropolishing solution attacks tantalum metal. Unichrome Tantalum Coils and Heat Exchangers, therefore, can save you money in controlling temperature of acid solutions such as chromium plating baths. Users report this acidproof equipment has paid for itself quickly by eliminating repair or replacement of lead coils and loss of production during the downtime. Bulletin TA-2 gives more information.

UNITED CHROMIUM, INCORPORATED
100 East 42nd Street, New York 17, N. Y. • Detroit 20, Mich.
Waterbury 20, Conn. • Chicago 4, Ill. • Los Angeles 13, Calif.
In Canada: United Chromium Limited, Toronto 1, Ont.

If you write maker identify as IEN - 8090

VALVE . . Power operated 4-way for remote power cylinder operation

Source: LEDEEN MFG. COMPANY
1600 S. San Pedro, Dept. IEN, Los Angeles 15, Calif.



Bulletin 1010

Model POR, for two-position action, and Model PON for three positions to include a neutral setting, designate new cylinder and piston equipped assemblies of the company's rotary disc type operating valve. Both are rated at 250-lb. pressure and are suited for operation by air, gas, oil or water as actuating media.

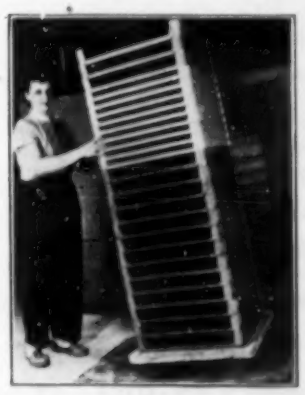
The valve disc is rotated by a crank operated by a small floating bar in the power cylinder attachment. Pilot pressure is applied to the free floating pistons at either side of the floating bar through two pilot valves located at either the main valve or at some remote point. Normally open or normally closed pilots can be employed.

Applying pressure through the pilot valve to the piston at one side of the floating bar moves it to the opposite side, rotating the disc to "forward" position. Applying the pilot pressure to the free floating piston at the opposite side moves it in the reverse direction to rotate the disc to "reverse" position. Type PON differs from this design by addition of a second free floating piston at each end of the operating assembly, and a third pilot to operate these pistons, to bring the valve into neutral position and hold it there. Both valve models are available in pipe connection sizes from ¾ to 1¼ inches. The company is prepared to supply pilot valves in finger cam, air or gas and solenoid operated designs.

If you write maker identify as IEN - 8091

HANDLING . . Molded plastic tray available in specified stacking sizes

Source: MOLDED FIBERGLASS TRAY CO.
Dept. IEN, Linesville, Pa.



Model 420

The company announces addition of a new stacking tray for food and small parts handling to its Toteline trays, previously described IEN-11183-53. The new tray is equipped with stacking lugs on the outside of all four corners so one tray meshes into another and so the corners themselves are reinforced. Several standard sizes are now in production. All are non-corrosive, rot proof and resistant to attack by most acids and alkalis. They will not warp and are dimensionally stable in a range between minus 60 and plus 300 deg. F.

The smooth surface of the fiber glass reinforced plastic is not affected by daily handling, scrubbing, dehydrating, freezing. The line is available in a variety of colors. The company is prepared to manufacture additional shapes and sizes for specified uses. When the trays are in stacked position, they can be tilted to a considerable angle without toppling over.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8092

thousands of users PROVE "HI-TEMP" C-5 THREAD COMPOUND IS BEST FOR ALL STUD THREADS and STAINLESS STEEL APPLICATIONS

✔ speeds up dis-assembly time
✔ prevents stud breakage
✔ eliminates pitting of stainless steel

NO MORE FROZEN OR GALLED STUDS EVEN AT 1800°F

Let us SEND you a *FREE SAMPLE* so you can PROVE to YOURSELF that C-5 will lick your toughest stud breakage problems!

To assure easy maintenance on products having threaded assemblies many leading product engineers have specified the use of Fel-Pro C-5 as an anti seize coating on stud threads prior to final production line assembly.

Fel-Pro's exclusive Colloidal-Copper formula allows for easy separation and reduces stud breakage of threaded assemblies after long exposures to extreme temperatures. It eliminates pitting of stainless and alloy steel even where dissimilar metals are joined.

Conduct your own tests with C-5 "Hi Temp" at our expense. Write on your company letterhead for Free Sample and complete data sheet TODAY!

FELT PRODUCTS MFG. CO. 1523 Carroll Ave. • Chicago 7, Ill.

If you write maker identify as IEN - 8093

HANSEN ONE-HAND TACKER 1001 USES

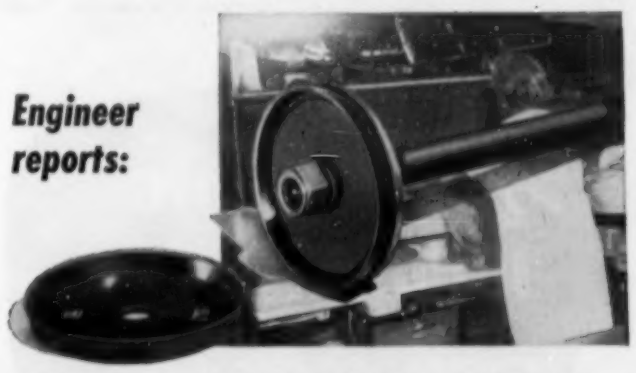
HERE'S A HANSEN TACKER (Model T-48) — powerful — compact — automatic — zip-zipping staples thru a rubber die on a printer-slotter. Only ONE of 1001 every-day uses where HANSEN tacks — FASTER — BETTER — AT LESS COST.

THIRTY-SIX MODELS — 80 staple sizes (some packed in convenient Vest-Kit) — for a wide range of uses in assembly, production, shipping. Modernize your tacking method!

A. L. HANSEN MFG. CO. REQUEST BOOKLET
5051 RAVENSWOOD AVE. • CHICAGO 40, ILLINOIS

If you write maker identify as IEN - 8094

Engineer reports:



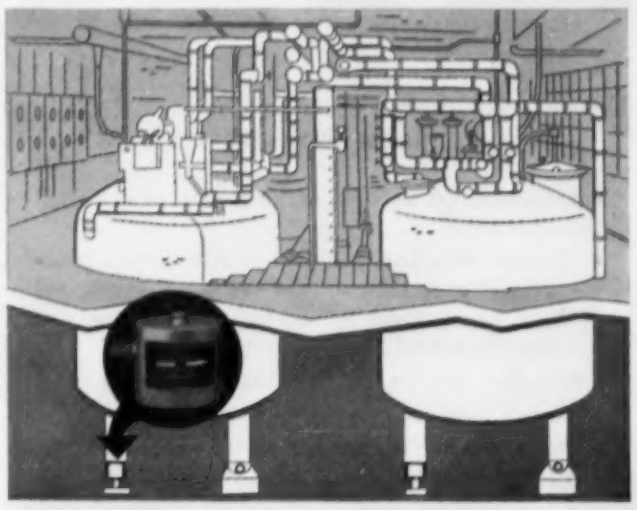
"Maintenance practically eliminated with J-M Moulded Packing Cups"

A large laundry (name on request) encountered excessive downtime on presses, for maintenance of packings. When they changed to J-M Moulded Packing Cups, packing life was greatly increased, downtime drastically reduced, danger of soiling laundry from servicing packings eliminated.

J-M Moulded Packing Cups are made in many compositions to meet a wide range of pressures, temperatures and service conditions. For details write to Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

Johns-Manville PACKINGS and GASKETS

If you write maker identify as IEN - 8095



Baldwin SR-4® load cells permit remote and automatic control of latex "batching"

To weigh liquid latex directly in the processing tanks, this leading rubber company sought a method which would require very little head room, use a minimum of steel and control various steps of each batch with ½ of 1% accuracy.

This problem was solved by installing a Baldwin SR-4 weighing system. The SR-4 cells' small size, rugged construction and absence of moving parts made it possible to meet each requirement set by the customer. The electrical nature of the SR-4 cells also made possible remote location of the indicating-controlling instrument.

Write for our two new booklets on tank weighing (No. 4106) and crane scales (No. 4105). Address: Dept. 3113 Baldwin-Lima-Hamilton Corporation, Philadelphia 42, Pa.

BALDWIN-LIMA-HAMILTON
Philadelphia 42, Pa. • Offices in Principal Cities
In Canada: Peacock Bros., Ltd., Montreal, Quebec

If you write maker identify as IEN - 8096

SPECIAL TAPS

by DETROIT

ARE TOPS FOR A GOOD REASON

Every detail of every special tap produced is recorded under a unique Detroit Tap system.

This record system controls quality from your first order. Having found the "right" tap for the job, you'll get the same results with every additional tap you order.

Such records minimize development of special taps. Often, the new problem is so similar to a previous one—already a matter of record—that a minimum of research and engineering is required. The advantage of such service is obvious. See your Detroit Tap representative today.

DETROIT TAP & TOOL CO.
8615 E. EIGHT MILE RD. BASELINE, MICHIGAN

If you write maker identify as IEN - 8097

New Hunter Industrial Fan

POWERFUL, LOW-COST VENTILATION

FEATURES:

- Streamlined orifice for efficient air entrance
- Aluminum alloy blades—non-rusting, non-crystallizing, non-overloading
- "Gull Wing Design" airfoil blades for strength and uniform pressure
- Effective up to ½ in. static pressure
- Heavy continuous-duty motor
- Permanently lubricated and sealed for life
- Direct-drive for reduced maintenance costs
- Automatic shutters to fit all fan sizes

Hunter

CLIP AND MAIL NOW FOR COMPLETE DATA

Hunter Fan & Ventilating Company
375 S. Front St., Memphis 2, Tenn.
Send complete information on Hunter Industrial Fan to:

Name_____

Address_____

*For specific recommendations, advise us of your ventilation problem.

NEW LITERATURE—Concluded

If you write maker identify as IEN - 0693

TRANSFORMERS . . Instrument current and potential transformers, indoor and outdoor models, for 15 types of application. Catalog 131, 30 pages, with list prices. R. E. Uptegraff Mfg. Co., 120 Bridge St., Dept. IEN, Scottdale, Pa.

If you write maker identify as IEN - 0694

LIFT TRUCK . . Traveloader side-loading truck carries like a straddle truck, delivers like a highway truck, stacks like a fork truck. Bulletin 1300, 8 pages, shows how. Baker-Raulang Co., 1230 W. 80th St., Dept. IEN, Cleveland 2, Ohio

If you write maker identify as IEN - 0695

LIFT TRUCK . . Electric, hydraulic, mechanical design points of the company's electric fork truck are pictured in 16-page Bulletin SP-4301, "Electri-Facts". Clark Equipment Co., Dept. IEN, Battle Creek 49, Mich.

If you write maker identify as IEN - 0696

STAINLESS TUBE . . Condensed technical data in 16-page Bulletin 112 covers physical and mechanical properties, sizes, tolerances, pressures, special shapes, corrosion resistance, weights, high-temperature properties. Carpenter Steel Co., Springfield Road, Dept. IEN, Union, N. J.

If you write maker identify as IEN - 0697

VALVE OPERATORS . . Limitorque is a motor-driven operator for 1½ to 8-in. valves. It is actuated by a remote pushbutton station, has a handwheel, acts to limit amount of torque applied. Bulletin SMA-000, 4 pages. Philadelphia Gear Works, Erie Ave. & G St., Dept. IEN, Philadelphia 34, Pa.

If you write maker identify as IEN - 0698

VALVES . . Lubricated plug valves in full-port and venturi designs, sizes to 14 in., with self-sealed two-piece or single-piece plug construction. Bulletin 39-5, 24 pages. Homestead Valve Mfg. Co., Box 85, Dept. IEN, Coraopolis, Pa.

If you write maker identify as IEN - 0699

OPERATING VALVES . . Catalog 841, 68 pages, describes oil hydraulic gasket-mounted valves for 3,000-lb. service including 2-way, 4-way, relief, sequence units. Hydraulic Press Mfg. Co., Dept. IEN, Mount Gilead, Ohio

If you write maker identify as IEN - 0700

WIRE CLOTH PARTS . . Strainers, filters, screens and other parts in many metals and a variety of designs. Examples are shown in 8-page "Fabricated Parts" bulletin. Newark Wire Cloth Co., 351 Verona Ave., Dept. IEN, Newark 4, N. J.

If you write maker identify as IEN - 0701

WIRE ROPE . . Recommendations are grouped by type of application in revised 56-page bulletin, "Wire Rope Recommendations", with detail information to assist in ordering and re-ordering. John A. Roebling's Sons Corp., 640 S. Broad St., Dept. IEN, Trenton 2, N. J.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8099

SPRAYING SYSTEMS CO.

SPRAY NOZZLES

exact performance for every need

Choice of thousands of standard spray nozzles gives you exact spray pattern, capacity, impact and atomization. PROMPT . . . often immediate delivery from stock.

BE SURE TO WRITE FOR . . . .

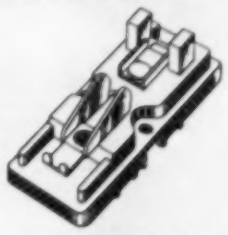
the most complete spray nozzle catalog ever printed . . . forty-eight pages of detailed information. Write for your free copy of Catalog No. 24.

SPRAYING SYSTEMS CO.
3208 Randolph Street • Bellwood, Illinois

If you write maker identify as IEN - 8100

How to cut staking costs with DENISON MULTIPRESS®

BEFORE STAKING
six component parts



AFTER STAKING
in process magnetic switch

A MAGNETIC SWITCH manufacturer is saving $11,549 a year with one Denison Multipress . . . staking together six parts of the switch with one smooth stroke of the hydraulically-controlled ram. Scrap reduction alone saves $7,345 a year.

IDEAS FOR YOU. Denison's new Bulletin No. 153 has many cost-cutting ideas . . . ways you can benefit by using Denison Multipress for staking and hundreds of other jobs in the one to 75-ton pressure range. For your copy, write to: THE DENISON ENGINEERING COMPANY, 1150 Dublin Road, Columbus 16, Ohio.

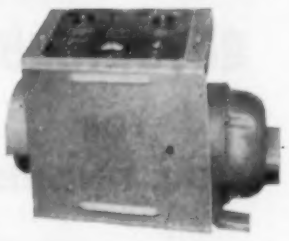
DENISON Hydr OIL ics

PUMPS • MOTORS • CONTROLS • PRESSES

If you write maker identify as IEN - 8101

ATTENTION: ELECTRIC TRUCK USERS

CHARGE BOTH EDISON AND LEAD-ACID BATTERIES WITH ONE MULTI-PURPOSE CHARGER



THE NEW HERTNER Model UX-2 MULTI-PURPOSE CHARGER simplifies charging problems and reduces costs. It permits standardization in charger facilities. Now it is possible to replace specific-purpose chargers with fewer Multi-Purpose Chargers. This charger can be converted quickly and easily from charging Edison batteries to lead-acid batteries, and back again. Ease of conversion also applies to changing from one size of battery to another—both lead-acid and Edison types. All of the latest features of automatic control and protective devices are found in this newest Charg-O-Matic unit.

For full details and specifications write for Bulletin 210

IMMEDIATE DELIVERY

LOOK TO HERTNER FOR THE LATEST IN BATTERY CHARGERS

Hertner

THE HERTNER ELECTRIC COMPANY
17690 ELMWOOD AVENUE . . . CLEVELAND 11, OHIO
A General Precision Equipment Corporation Subsidiary

MOTORS • MOTOR GENERATORS • GENERATOR SETS

If you write maker identify as IEN - 8102

RELAYS

IMMEDIATE DELIVERY FROM STOCK

Special attention is given to orders of one or more relays for engineering and lab samples or for experimental purposes. 24 hour delivery will permit you to draw from our stock rather than schedule your orders for months in advance.

Relay Sales maintains the world's largest stock of relays for practically every application. Nothing but first line products of leading manufacturers are carried. Each relay is brand new, individually inspected and unconditionally guaranteed. Prices less than market.

Hundreds of Types in Stock

STANDARD TELEPHONE RELAYS
SHORT TELEPHONE RELAYS
MIDGET RELAYS
TIMERS
AIRCRAFT CONTACTORS
ROTARY RELAYS
WESTERN ELECTRIC TYPE "E" RELAYS
KEYING RELAYS
HERMETICALLY SEALED RELAYS
VOLTAGE REGULATORS AND CUTOUTS
DIFFERENTIAL AND POLARIZED RELAYS
SPECIAL RELAYS
BK-SERIES
ANTENNA AND CERAMIC RELAYS
MOTOR AND CONTROL RELAYS
RELAY ASSEMBLIES
LATCHING AND INTERLOCKING RELAYS
MECHANICAL ACTION RELAYS
RATCHET AND STEPPING RELAYS

Relay Sales

Phone: AUstin 7-0709
Write for New Relay Catalog C-5
4721 W. MADISON STREET, Dept. 9
CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 8103

No matter what your float needs are, you can meet them from Chicago Float's complete line. Where pressure and temperature requirements are critical you can satisfy them with long wearing, dependable stainless steel floats which are built to withstand pressures to 1000 lbs. and temperatures to 800° F.

A complete line of standard seamless copper floats is available for low temperature and pressure services. In addition, you can get floats in brass, monel, steel or nickel for certain specific requirements. A wide variety of standard shapes, sizes and spud connections are offered. Special floats made to order.

SEND FOR YOUR COPY OF COMPLETE CATALOG CONTAINING ALL VITAL INFORMATION ON FLOATS

CHICAGO FLOAT WORKS

2326 S. Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 8104

Easy to Maneuver in small space
WESTINGHOUSE AIR BRAKE COMPANY'S NEW
Front End Loader

You can maneuver it easily *inside* boxcars, in and out of small storage bins, through narrow passageways, around pillars and stacked materials. This new loader's small size and simple operation speed handling of bulk materials and reduce costs in chemical, cement, and fertilizer plants, as well as foundries.

The short 46-inch wheel base enables the operator to swing this machine around in a radius of only 74 inches. He can dump with the bucket 73 inches off the floor—20 inches higher than most comparable machines — and thus can easily load trucks, and high bins or hoppers. All controls are mounted right at the steering wheel, so he can lift, load, dump, or shift gears with a movement of his hand.

This new Westinghouse TL-50 Front End Loader weighs 5250 lbs., is powered by a husky Le Roi gasoline engine. Write for complete details.

Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION · WILMERDING, PENNA.

Manufacturers of air compressors, pneumatic cylinders, actuators, air control devices, engineered pneumatic control systems and front end loaders.

FACTORY BRANCH: Emeryville, Calif.

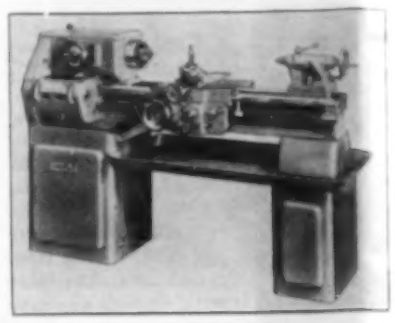
Distributors throughout the United States . . . Consult your Classified Directory. Distributed in Canada by: Canadian Westinghouse Co. Ltd., Hamilton, Ont.

NEW MOVIE AVAILABLE entitled, "AT THIS MOMENT"—showing a vivid story of modern railroad progress. Length 26 minutes, on 16mm color sound film. For use of film write: United World Films, Inc., 1445 Park Ave., New York, or Association Films, Inc., 347 Madison Ave., New York.

If you write maker identify as IEN - 8106

LATHE . . Geared head design, 13 in. swing, 31½ in. on centers

Source: SHELDON MACHINE CO.
4258 N. Knox Ave., Dept. IEN, Chicago 41, Ill.



Bulletin S4954

The spindle in this new Sebastian lathe is made of hardened steel. It carries splines and is fitted with a 1⅜-in. through hole. It is mounted on tapered roller bearings and carries a standard long tapered key drive spindle nose. Eight speeds are from 25 to 575 rpm., with a single speed 1,200 rpm. motor. With a two speed motor, the range is in 16 steps between 15 and 860 rpm. Speeds are selected by turning a dial on the front of the headstock.

Sixty thread pitches are selected between 2 and 120 per inch, by positioning the gears in a feed box on the front of the machine. Feed range is between 0.002 and 0.120 in. per revolution. The feed box includes a reverse lever for the lead screw. Gears in the headstock operate in oil.

The carriage mounts a double wall apron with its gears running in oil. Longitudinal and cross feed control operate through multiple disc type clutches. They can be engaged separately or simultaneously. The cam action tailstock is lever operated for quick movement along the ways. The bed is a one-piece casting. A cabinet in the pedestal leg provides for storage of tools and accessories. The machine weighs 1,600 pounds.

If you write maker identify as IEN - 8107

PRESS . . Motor driven machine, 5 ton, mounts removable bed or horn

Source: SERVICE MACHINE CO.
7629 S. Ashland Ave., Dept. IEN, Chicago 20, Ill.

Also mounts on bench

The bed, on this new Model-OH 5-ton press, can be mounted in six different keyed positions, variable in 1-in. steps vertically, to provide die space to a maximum of 10 inches. The bed can be removed to drill die set holes or to be replaced by a horn. Special fixtures also can be mounted directly on the face of the press frame. Bed dimensions are 7 by 10½ inches. Standard opening in the bed measures 4 in. in diameter. The opening through the frame for the ram measures 2 in. in diameter in standard construction.

The press is designed for operation at 250 strokes per min. with a ⅓-hp. motor operating at 1,750 rpm. The motor connects by belt to the flywheel which weighs 60 lb. and measures 15½ in. in diameter. Standard stroke is 1¼ inches. Bed to slide, with stroke down and adjustment up, is minimum at 4 inches. Ram to center of horn, with stroke down and adjustment up, is 5½ inches. The press requires a floor space measuring 26 by 22 inches. It weighs 400 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8108

Wickwire rope slings are offered in both braided and single part construction to meet a wide variety of service requirements.

For additional information write to Wire Rope sales office, Palmer, Mass.

WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

2015

If you write maker identify as IEN - 8109

. . . used for over 15 years on "TACO" Water Circulating Pumps to assure dependable operation

Illustrated is a Taco Water Circulating Pump manufactured by Taco Heaters Incorporated, Providence, R.I. The motors used in these units have built-in Klixon Protectors to prevent motor burnouts. Here's what Mr. R. T. Schoerner, Chief Engineer, has to say about Klixon . . .

"We have been using motors equipped with Klixon Overload Protectors on our circulating pumps for more than 15 years. We have found these protectors to be unusually dependable for this tough service."

As a user of electric motors, you can keep your equipment operating, cut motor repair and replacement costs by using motors with built-in Klixon Protectors. The additional cost is low . . . pays for itself in short order.

SPENCER THERMOSTAT
Division of Metals & Controls Corporation
207 FOREST STREET, ATTLEBORO, MASS.

KLIXON

If you write maker identify as IEN - 8110

Yes, one false note can ruin years of hard-earned good will. That's why Kester stresses consistency . . . makes sure the solder alloy and especially the flux formula never varies. Kester never experiments at the expense of the solder user!

FREE: *Technical Manual*
Write for your copy of "SOLDER and Soldering Technique."

KESTER

SOLDER COMPANY

4211 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 8111

Model 8C's smooth, clean-cut design eliminates the multitude of clothes-catching, dirt-catching and knuckle-barking projections common to conventional metal cutting band saws.

AN ALL-NEW DESIGN . . .

FIRST TO MEET TODAY'S METAL CUTTING NEEDS!

You'll get performance never before available when you get the ALL-NEW Model 8C band saw. Designed to meet your metal cutting needs today—and for a *long time* to come—Model 8C embodies years of *Kalamazoo* experience in the field and the best industrial design talent.

Once you've *seen* the new 8C, you'll agree it has everything you've been looking for in an 8-inch metal cutting band saw. Ask your dealer for a demonstration *soon*—or write today for descriptive literature and the name of your dealer.

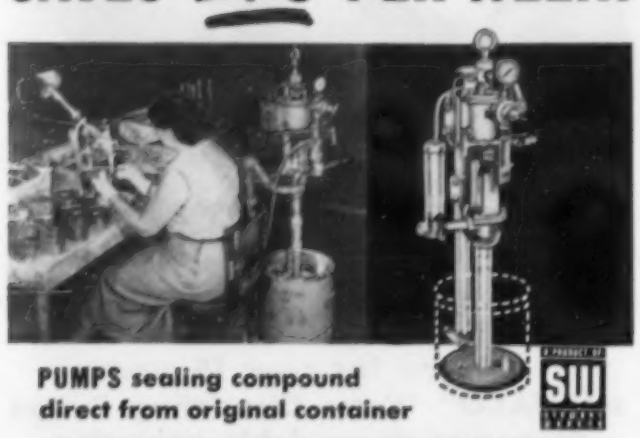
MACHINE TOOL DIVISION

Kalamazoo TANK and SILO CO.

711 HARRISON STREET • KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 8112

ONE VERSATAL PUMP SAVES $270 PER WEEK!



PUMPS sealing compound direct from original container

Not only does this Alemite Versatal application save $270 per week in materials—but it also makes possible a 500% increase in operator efficiency!

Air-operated Versatal Pumps apply material faster, easier, at less cost . . . give positive, uniform delivery through long lines—safely and without waste.

FREE Send now for idea book. How Alemite Versatal Equipment can speed, simplify your handling problems. Write Alemite, Dept. 8-74, 1830 Diversey Parkway, Chicago 14, Illinois.

ALEMITE Versatal

If you write maker identify as IEN - 8113

AIR CYLINDER POWER UNIT

offers a choice of

SIX BUILT-IN VALVES

Now, the Bellows Air Motor — the only air cylinder with an integral valve — offers a choice of six built-in valves:

1. Finger-touch manual control valve.
2. Low voltage electrical control — standard or explosion-proof.
3. 110 volt maintained contact electrical control.
4. Maintained pressure air pilot valve control.
5. Momentary exhaust air poppet valve control.
6. Continuous cycling control.

Here is a range of air cylinders with integral valving that offers the engineer every latitude in pneumatic design.

Completely described in Bulletin CL-50 FREE on Request. *Write for it today, Dept. IEN 754.* 821A

The Bellows Co.
AKRON 9, OHIO

If you write maker identify as IEN - 8114

Abart SPEED REDUCERS

case hardened and ground alloy steel WORM INTEGRAL WITH SHAFT

. . . another characteristic contributing to ABART QUALITY

Long-lasting, efficient, economical performance is built into all Abart units. Proven dependability...on numerous applications for thirty years . . . makes Abart the favorite of design and maintenance engineers.

Over 75 types and sizes (spur, worm, and combination)—ratings from 1/50 to 168 hp. with ratios up to 10,000 to 1—to meet your requirements. Specials to order.

Send for free, pocket-size catalog covering Abart's complete line of Speed Reducers and Gears.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS

If you write maker identify as IEN - 8115

CONTROL . . Electronic instruments designed to regulate process variables

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Bulletin GED-2100

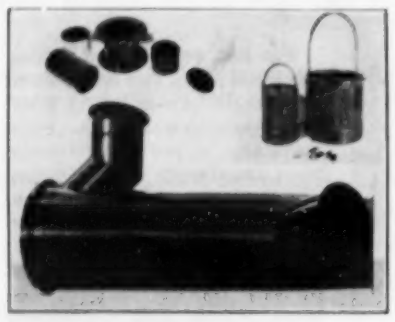
Continuous measurement and control, uninterrupted by periodic standardization, characterize the operation of the company's new potentiometric and ac. bridge recorders and recording controllers. Both types are available with electric or pneumatic control and are equipped with a new type of pointer whose shaft extends to the center pivot back of the chart plate. Only its point appears in front of the chart.

The new magnetic standard eliminates dry cells, slide wires and associated equipment. The bridge balancing unit supplies power to the bridge and provides a means for rebalancing it continuously by actuating a servo motor. Both instruments include plug-in components, gearing free from backlash, internal illumination and integral pen-inkwell assemblies designed for automatic realignment. Assembly is in a steel case. A die cast aluminum cover is sealed with neoprene gaskets against entrance of dirt or moisture. The instruments are available for wall or flush mounting. Chart speeds are 1, 4, 8, 12, 24 hr. and 7 days. Operation in on 110-volt 60-cycle ac. Weight ranges from 75 to 95 pounds.

If you write maker identify as IEN - 8116

CORROSION PROOFING . . Plastic coating service operates on contract

Source: ARBONITE CORPORATION
900 N. Main St., Dept. IEN, Doylestown, Pa.



Typical coated work

The company announces availability of facilities to make or modify metal structures, to make small production runs of metal products, to prepare these parts, as well as fabricated work sent in for the purpose, and finally to coat the work with corrosion resistant solutions of polyvinyl chloride plastic.

The plastic forms an impenetrable barrier against chemical and electrolytic attack. It presents a smooth soft tough surface that resists abrasion and protects materials coming into contact with the surfaces against scratching or marring. The rubber-like resiliency and elasticity of the coating make it particularly suited to cover metal conveyors that are to carry fragile materials and delicate mechanisms as well as to protect the conveyor parts against corrosion. The company has coated single piece structures measuring to 12 ft. in length by 4 ft. in greatest cross section. Larger units can be handled.

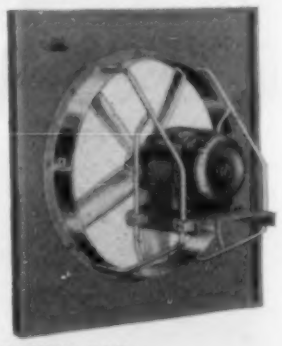
If you write maker identify as IEN - 8117

NEW DIRECT-DRIVEN INDUSTRIAL

Exhaust Fans

SIZES 12" thru 48" . . . CAPACITIES 900 to 34,200 CFM

- Finest one-piece cast aluminum precision balanced blades.
- Rugged welded steel construction.
- Engineered for horizontal or vertical operation.
- Designed for continuous duty—long life service.
- Easily installed. Virtually maintenance free.



WRITE FOR BULLETIN 500

The complete M & E line includes duct fans, mancoolers, roof ventilators, penthouses and accessory items, belt-driven exhaust fans, and ventilators for hazardous locations.

Distributorships and Manufacturer's Agency Appointments Available

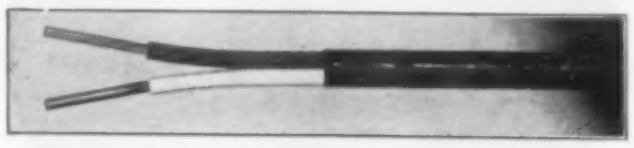
M & E EXHAUST FANS

M & E MANUFACTURING COMPANY
2619 Winthrop Ave. • Indianapolis 5, Ind.

If you write maker identify as IEN - 8118

CONDUCTOR . . Insulated wire for thermocouple extension circuits

Source: THERMO ELECTRIC CO.
Dept. IEN, Saddle River Twp., Rochelle Pk. P. O., N. J.



Actual size

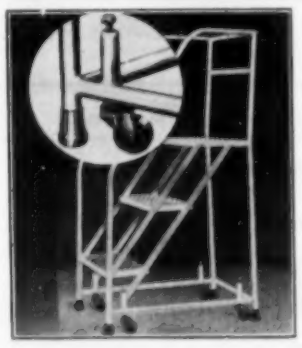
Type PN is a new wire in 14, 16 and 20 gage for iron constantan, copper constantan and chromel alumel thermocouples. It is insulated with polyvinyl plastic and then covered with nylon rather than with cotton which the company formerly employed. The result is a smaller diameter than the previous design and a smooth surface that resists wear from abrasion and makes it easy to pull the wire through conduit.

The insulation is resistant to flame and attack by moisture, petroleum products and fungus. It strips readily and is listed at a lower figure than the previous wire.

If you write maker identify as IEN - 8119

LADDER . . Steel tube assembly, safety treads and retractable casters

Source: BALLYMORE COMPANY
139 Pennsylvania Ave., Dept. IEN, Wayne, Pa.



Provides safe footing

A total of 115 standard types, with a maximum of 12 steps and a choice of 3 safety treads to include expanded steel lath, steel grip-strut or rubber clad steel plate, make up the company's line of safety step ladders. The illustration shows a new rubber grip that applies on the tubular steel feet to engage the floor when a user steps on the ladder. His added weight causes springs, backing the casters, to retract so the feet contact the floor and the rubber grips prevent skidding. The tubular frame is assembled by welding. The springs above the casters are adjustable.

If you write maker identify as IEN - 8120

The electrode support arm on an electric furnace rides on the piston of a vertical hydraulic cylinder in a new position control developed by Whiting Corporation, 15629 S. Lathrop Ave., Dept. IEN, Harvey, Ill. Two motor driven pumps serve the cylinder. The first pumps oil from a supply tank to the cylinder to raise the electrode. The second pumps it out and back to the tank to bring the electrode down. When both are working at the same rate the electrode stands still.

The first pump motor is a constant speed ac. unit. Its pump does not vary the delivery. The second pump motor is a variable speed dc. unit and is controlled by the voltage in the electrode arc. Both operate in one direction only, do not have to reverse. The second pump motor runs faster or slower to bring the electrode down, permit it to stand still or cause it to rise.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

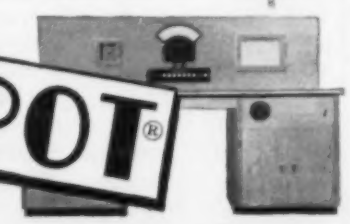
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8121

DIELECTRIC STRENGTH TESTING INSTRUMENTS

. . . from a handful . . . to a shop full!

HYPOT®



You name it . . . ARI either has it, or can build it for you promptly from sound design and long experience with virtually every known type of high potential dielectric strength testing instrument.

Standard "Hypot" Juniors range from 0-1500 volts to 0-6000 volts. Large mobile Hypots available to 50,000 volts, 5 KVA. **Write for data today!**

ASSOCIATED RESEARCH, Incorporated
Precision Instruments Since 1936
3762 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

If you write maker identify as **IEN - 8122**

TRUCK . . Motor driven tractor, 200 lb. drawbar pull at 3¼ mph.

Source: BARRETT-CRAVENS COMPANY
628 Dundee Road, Dept. IEN, Northbrook, Ill.

Power wheel steers

Model XX-24 Tractor Ox is a new addition to the company's line of motor driven industrial trucks and tractors. The new machine rates 200-lb. drawbar pull at 3¼ mph. or sufficient to operate a 5-ton rolling load at that speed. Free speed is 6¼ mph. Power is supplied by a 24-volt battery.

The operator stands on a platform at the rear of the unit and controls movement and direction at the steering handle where forward and reverse bush button controls and a dual trigger hand operated brake control are located. There are four speeds forward and three in reverse. The unit will operate in 39-in. intersecting aisles without its trailer train.

If you write maker identify as **IEN - 8123**

SEALING . . Teflon O-rings, 87 sizes from ⅛ to 15½ in. inside

Source: CHICAGO GASKET CO.
1271 W. North Ave., Dept. IEN, Chicago 22, Ill.

Dimensions in Bulletin B-3

Series 6227 designates a new line of standard O-rings ranging from ⅛ to 15½ in. in nominal inside diameter and from ¼ to 16 in. outside. An odd size, making 88 rings in the line, measures 4½ in. inside and 5 in. outside. The company is also prepared to supply a Series 6230 in which 52 sizes range from 1⅝ to 10 in. in inside diameter and from 1⅞ to 10¼ in. in outside diameter. This series is designed primarily for applications where static seals are required. The teflon is pliable and tough. It resists extrusion and twisting, is naturally slippery and is not subject to attack by other liquids or gases.

If you write maker identify as **IEN - 8124**

SCREW DRIVING . . Torque tool limits driving effort on small screws

Source: RICHMONT INCORPORATED
922 Myrtle Ave., Dept. IEN, Monrovia, Calif.

To set little fastenings correctly

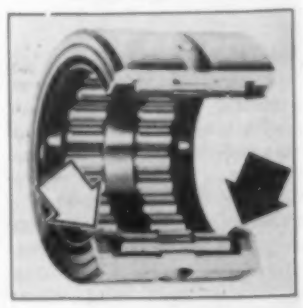
Roto-Torq Model PM-5 is a new unit in the Livermont line of torque limiting screw drivers and wrenches. The new unit weighs about 3 oz. with a standard bit. It is equipped with a magnetic bit holder and can be used with bits or hexagon sockets of various sizes. Torque capacity ranges from 4 to 80 inch ounces. Length, without a bit, is 5½ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8126**

BEARING . . Cageless roller design with center guide and lubricant seals

Source: McGILL MFG. COMPANY
100 N. Lafayette St., Dept. IEN, Valparaiso, Ind.



Bulletin SGR-54

Lubricant is retained and dirt is excluded in this new seal equipped design of the company's Guiderol roller bearing previously described IEN-8260-50. The seal is a combination of metal stamping for press fit into the outer bearing race and a synthetic rubber O-ring bonded to the stamping. The flexible lip of this ring rides against the bearing inner race or the shaft if an inner race is not employed. It turns in to retain lubricant in the bearing or can be turned outward to exclude dirt. The seal can be applied on one or both sides of the needle type rolls, to face in or out, or in a combination of out on one side and in on the other.

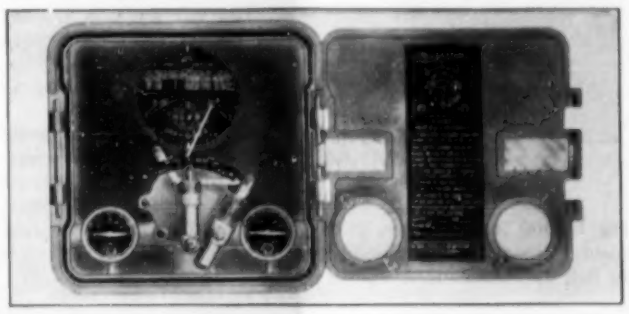
The outer race of the bearing carries an integral center guide rail to hold the rolls in place and to correct any tendency to cock because of shaft misalignment. Normally the rolls ride on a true axis out of contact with the rail. They make contact with it, if they tend to go out of line, in a position that will immediately correct this tendency.

Twenty sizes range in nominal outside diameter from 1.125 to 2.5625 in. with width at 1.000 to 1.250 inches. Inside diameter, when the rolls apply directly on a shaft, is from 0.625 to 2.000 in. and inside diameter when an inner race is employed is 0.375 to 1.6875 inches. Basic load capacity at 100 rpm. is 2,880 to 9,580 pounds.

If you write maker identify as **IEN - 8127**

CONTROL . . Pneumatic instrument to actuate liquid level control valve

Source: BLACK SIVALLS & BRYSON INC.
7500 E. 12th St., Dept. IEN, Kansas City 26, Mo.



Catalog 99-01 1954

Type 1450 is a new pilot type pneumatic instrument in which a torsion tube transmits float movements to reflect change in liquid level or a change in fluid gravity. The instrument provides for "snap" or "on-off" action in throttling actuating air to a control valve.

The instrument compensates for various gravities of liquid or for interface duty. The amount of liquid level change, between open and closed positions of the control valve, can be varied to 75 per cent of the length of the displacement element length, for snap action, or to the full length for throttling.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8129**

Cutting costs in thousands of drafting rooms

Kodagraph Reproduction Materials eliminate tedious retracing . . . produce better shop prints . . . simplify print production. Whether you make your own prints or use a blueprinter, it will pay you to know them.

Paper, gives you positive photographic intermediates directly from blueprints and other negatives.

Kodagraph Contact Paper is designed for use in contact photocopy printers . . . produces outstanding negatives.

Kodagraph Autopositive Papers and Film produce positive photographic intermediates without a negative step; can be exposed in standard printmaking equipment . . . processed in standard photographic solutions. Fast, easy roomlight handling!

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Kodagraph Projection Papers give you highest quality enlargements from microfilm or other reduced-scale negatives.

Write today for free booklet which describes all these materials.

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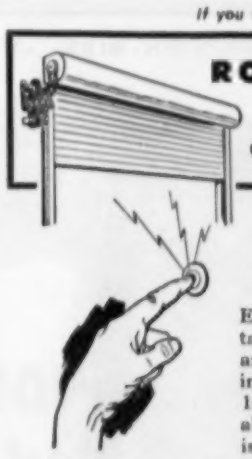
EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak TRADE MARK

If you write maker identify as **IEN - 8130**

ROBOT OPERATORS ...via Graybar



ELECTRONICALLY OPEN, CLOSE, AND LOCK DOORS AND GATES

Easy to install, operate and maintain, ROBOT Automatic Operators are available for doors, gates, awnings, oven doors, partitions . . . 1000 different uses where a dependable automatic electric power unit is needed to motivate either a reversing travel cycle or an intermittent cycle in a single direction. ROBOT manual and electronically controlled units meet the most rigid safety requirements . . . friction drive prevents damage to any person or object obstructing door operation. Write to Graybar, today, for free illustrated ROBOT Bulletin.

In addition, Graybar distributes everything electrical for wiring, lighting, power, and ventilation. Make it a point to order all your electrical needs through this single, convenient source — you'll simplify your purchasing problems and assure prompt, on-schedule deliveries. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, New York 17, N. Y.* 413-127

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as **IEN - 8125**

A.C.M.I. BORESCOPES

for close-up visual inspection of internal surfaces and hidden parts

A.C.M.I. Borescopes are available in 4 angles of vision (as above)—in diameters of .120" to 4.00"—in lengths of 4" to 720". Special models for special problems

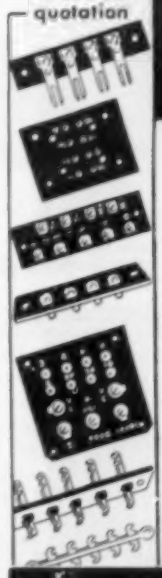
A.C.M.I. Borescopes permit close-up visual examination of interior areas and surfaces not otherwise visible. They save time and money, and prevent costly dismantling. • Each Borescope is a compact, self-illuminated industrial telescope of highest quality, employing a precision optical system, that produces a flat visual field. Lens systems are fully corrected for color, spherical aberrations, and coma, with all lens surfaces coated to increase light transmission.

Write for free informational folder, or tell us your problem.

American Cystoscope Makers, Inc.
1241 LAFAYETTE AVENUE NEW YORK 59, N. Y.

If you write maker identify as **IEN - 8128**

Send your specifications for prompt quotation



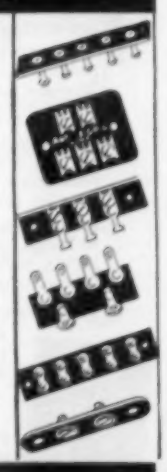
Hundreds of standard

JONES TERMINAL PANELS

Complete Equipment FOR SPECIALS

Several pages of Jones Catalog No. 20 illustrate standard and special panels we are constantly producing. Latest special equipment enables us promptly to produce practically any panel required. Send print or description for prices, without obligation. Hundreds of standard terminal strips also listed. Send for Catalog, with engineering drawings and data.

JONES MEANS *Proven* QUALITY



Jones

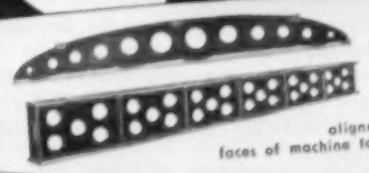
HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

If you write maker identify as **IEN - 8131**

WORK MATES TO MORE EFFICIENT PRECISION CRAFTSMANSHIP

CHALLENGE® SURFACE PLATE EQUIPMENT

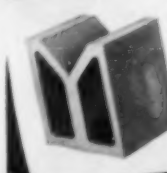
• HIGH GRADE SEMI-STEEL
• HEAT TREATED • PRECISION GROUND



STRAIGHT EDGES—For scraping planer and lathe bed ways . . . parallel straight edges for inspection of alignment and bearing surfaces of machine tools.

UNIVERSAL BOX ANGLES Combines the clamping facilities of an angle iron, the stable accuracy of a box parallel with the perpendicular flat surface of an angle plate.

ANGLE PLATES — Made in 22 sizes from 2¾ x 4¾ x 4¾ up to 24 x 24 x 24 for clamping and holding work.



V-BLOCKS — Feature ribbed sides, light weight and a V accuracy of .0005 inch . . . for supporting shafts for drilling, checking, etc.

BOX PARALLELS Complete range of sizes for every use . . . Accurate to .0005 inch.

THE CHALLENGE MACHINERY CO.

Office, Factories and Show Room: Grand Haven, Mich.

Challenge TRADE-MARK ®

Over 50 Years in Service of the Graphic Arts

DEALERS IN ALL PRINCIPAL CITIES

If you write maker identify as IEN - 8132

"Most of our dust is very fine but the DAY "AC" Dust Filter solved our problem".
Lapp Insulator Co., LeRoy, N. Y.

5 reasons for using DAY DUST FILTERS

("AC"—Hersey Type)

Five reasons why industries use and *reorder* DAY Dust Filters.

1. Constant air volumes.
2. High air-to-cloth ratio requires minimum floor space.
3. Self-adjusting blow rings assure perfect tube cleaning.
4. Continuous, automatic operation. No shut-down for cleaning.
5. Furnished housed or unhoused.

If you have a dust problem, write toDAY for Bulletin 528-R.

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In Canada: P.O. Box 707, Ft. William, Ont.
Branch Plants in Buffalo, Ft. Worth and Toronto, Ont.
Representatives in Principal Cities
SINCE 1881

If you write maker identify as IEN - 8133

New 40-page book

TO HELP YOU PLAN CIRCUIT PROTECTION

Westinghouse Circuit Breaker Protection is *modern* circuit protection, for three reasons. (1) Westinghouse Breakers stop needless production down time, because they do not trip on temporary or harmless overloads. (2) Westinghouse Breakers are designed to be foolproof . . . safe, tamperproof, maintenance free. (3) Westinghouse Breakers are versatile . . . there is a standard or a special breaker for every conceivable industrial, commercial or residential requirement.

Get this free booklet to help you plan circuit protection right. Write for B-6145, Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

J-30177

YOU CAN BE SURE...IF IT'S **Westinghouse**

Westinghouse Electric Corporation
3 Gateway Center, Pittsburgh 30, Pa.

Please send me Circuit Breaker booklet, B-6145.

Name_____
Company_____
Address_____
City_____ State_____

If you write maker identify as IEN - 8135

TESTING . . Universal machine for fabric, rubber, plastics, springs

Source: W. C. DILLON & COMPANY
14620 Keswick St., Dept. IEN, Van Nuys, Calif.

Super-Tall Model L

Materials, having considerable elongation under load, can be tension tested in this new Model-L machine with its 75 in. of maximum opening between the grips. The machine represents further development of a previous design with maximum opening at 40 inches. Application can be made in compression, transverse and shear testing as well as in tension. Seven capacities are maximum at 250 to 10,000 pounds.

The machine is operated by turning a hand wheel, or closing a motor circuit when, in the latter case, a motorized machine is specified. Variable speeds are available with the motor drive. The indicating dial can be supplied in either 5 or 10 in. diameter. Grips are available for a range of materials. Assembly is on a stand measuring 22 by 15 by about 29 inches.

If you write maker identify as IEN - 8136

VALVE . . Two stage, quick opening, self-closing, for compressed air line

Source: F. C. KINGSTON COMPANY
1007 N. Main St., Dept. IEN, Los Angeles 12, Calif.

Patent applied for

Double stem construction in this new valve opens a small inner port on initial movement of the operating lever and then follows with opening of the main port for full air line flow. The valve opens against spring action which serves to close it on release of the lever. This lever can be specified as pull or grip design.

The valve is available in ½, ¾ and 1-in. pipe thread sizes. Its body and cap are made of cast brass with pressure rating to 400 lb. of water. It is particularly suited to control pneumatic equipment requiring initial starting action prior to full operation. It is known as the Kingston Fig. 313.

If you write maker identify as IEN - 8137

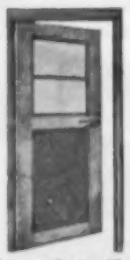
Weight reductions, amounting to 0.5 to 2.5 lb. per 100 nuts, are announced by Elastic Stop Nut Corp., 2330 Vauxhall Road, Dept. IEN, Union, N. J., in four new light weight lines of Elastic Stop Nuts, particularly for aircraft application. One of the four is made of aluminum alloy to meet the AN tensile strength requirements for steel nuts of the same thread size. Another is a Type Y nut with 12-point design that can be made smaller and lighter than the regular hexagon nut without sacrificing strength. A third is a new all metal locknut design for temperatures to 550 deg. F. and a fourth is a new nut for service as high as 1,200 deg. F.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8138

Strong - Sturdy TRUSCON INDUSTRIAL STEEL DOORS

These strong durable units are practically indestructible. They are particularly adaptable for use in basements, rear entrances, boiler rooms, fire exits and similar locations in factories, hotels, apartments, schools, churches, shops, warehouses, filling stations and stores. Swing Type Doors are furnished with heavily reinforced pressed steel door frames, prepared for Truscon standard door hardware.



Truscon Swing Type Steel Doors

Stiles and rails are made of pressed steel tubing with continuous lock seam. All corners are carefully fitted, substantially reinforced, and welded solidly. The large size of the 16 gauge tube, 1¾" x 5", provides approximately 14" of continuous welding around the perimeter – thus insuring permanent rigidity and complete elimination of sagging.

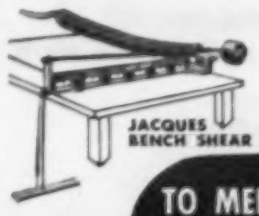
Truscon Slide Type Steel Doors

Swing doors may be equipped with either lever latch or cylinder lock hardware. Slide doors have hasp and staple hardware.

FREE BOOK!
Illustrated literature gives complete details and specifications on Truscon Industrial Steel Doors. Write for it.

TRUSCON® STEEL DIVISION
REPUBLIC STEEL
1094 ALBERT STREET • YOUNGSTOWN 1, OHIO

If you write maker identify as IEN - 8139



JACQUES BENCH SHEAR

HOBBS POWER SHEAR

TO MEET EVERY CUTTING NEED HOBBS HAND AND POWER SHEARS

JACQUES UNIVERSAL SHEAR

JACQUES, JR. CUTTER

Whether you need cutters for production work or for occasional use, you'll find the most efficient and most economical answer in the Hobbs line of Jacques Hand Shears and Hobbs Power Shears. They are specially designed to cleanly, accurately cut paper, plastic, fabric, laminations, leather, synthetics and many other materials from rolls and sheets. Ruggedly built, they have hardened steel blades — will give you years of trouble-free service.

For continuous or intermittent cutting in quantity, Hobbs offers you a powerized cutter with gauges that is adaptable to any production set-up. Cuts at speeds up to 87 strokes per minute. Completely automatic production cutters are also available.

The Jacques Universal Shear is complete with table and accurate gauges for cutting sheets into uniform strips ⅛" to 20" in width. Six sizes available — 30" to 60".

You can choose from 12 sizes of Jacques Bench Shears for cutting in widths up to 10 feet. Special tables and gauge arrangements to order. The Jacques, Jr. Cutter is an accurate, versatile all-metal unit for widths 12" to 36". Self-supporting clamp automatically holds material. Table and bench models available.

Get the complete facts today! Write for catalog sheet describing any of these modern Hobbs Shears. No obligation.

HOBBS MANUFACTURING CO.
40 SALISBURY ST., WORCESTER 5, MASS.
New York Office: 132 Nassau St.
Chicago office at 549 West Washington Blvd.
EST. 1883 *Manufacturers of Modern Converting Machinery*
Jacques Hand Shears; Hobbs Production Cutters, Corner Cutters, Slitters and Rewinders, Autotronic, Tri-Power and "Adjustable Die" Presses

If you write maker identify as IEN - 8140

COMPARE MOTO-TRUC *for...*

★ MANEUVERABILITY
★ TRULY FUNCTIONAL DESIGN
★ EASE OF OPERATION
★ EASE OF MAINTENANCE
★ PRICE

Only through diligent comparison can your choice of materials handling trucks be a wise and economical one.

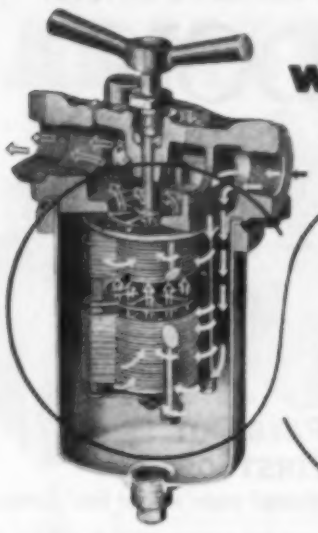
Design features that are *tomorrow's* standards are incorporated in MOTO-TRUCS . . . *today* . . . these features are often copied . . . yet never equalled.

Investigate the complete MOTO-TRUC line of Walkies . . . and remember . . . There's a MOTO-TRUC for every purpose.

Send for Bulletin #54

Representatives in Principal Cities
The MOTO-TRUC Co.
1987 E. 59th STREET • CLEVELAND 3, OHIO
PALLET . . . PLATFORM . . . HI-LIFT TRUCKS
LARGEST EXCLUSIVE MANUFACTURERS OF "WALKIES"

If you write maker identify as IEN - 8142



WHAT FLUID STRAINER

is non-stopping (A)
and
is permanent (B)
and
handles full flow (C)
and
guarantees performance (D) ?

A. Cuno AUTO-KLEAN is continuously-cleanable, manually or automatically, without stopping flow

B. Cuno AUTO-KLEAN is all-metal, disc-type, non-collapsible

C. Cuno AUTO-KLEAN can handle full flow—a few to more than 4000 gpm—in same space as usual partial-flow type

D. Cuno AUTO-KLEAN will remove all particles larger than specified—from .0035 in. to .062 in.

CUNO

Fluid Conditioning

Removes More Sizes of Solids from More Types of Fluids

Widely used on lubricating, hydraulic and fuel oils, water, and all industrial fluids.

For free booklet on fluid straining, address Cuno Engineering Corp., 695 South Vine Street, Meriden, Connecticut.

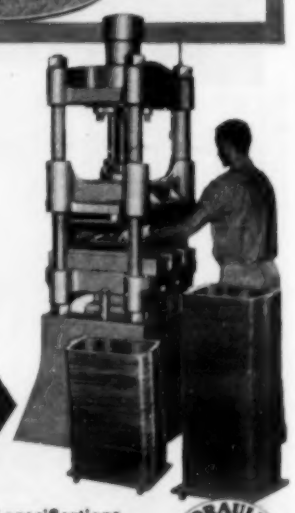
If you write maker identify as IEN - 8143

this
RODGERS PLATEN PRESS
produces
GRIDDLES
at a sizzling rate!

When Northland Aluminum Products of Minneapolis changed from a mechanical press to a Rodgers 100 ton Hydraulic Platen Press, they were pleased and surprised at the unusual results. No wonder—production is up, quality and finish is better, die wear and die setup time are reduced. These advantages are important to Northland for their variety of products, Nordic Ware Aluminum Utensils, Griddle King Griddles and Steak Platters.

Although you may produce an entirely different line, you will find a Standard Rodgers Platen Press offers you the same advantages—whether your jobs are stamping, forming, drawing, coining, or die try-out—in metal or plastics.

The Rodgers 100 ton Hydraulic 24" x 24" Platen Press blanks and forms 8 Northland Griddle Kings per minute.



Write for the new Illustrated Rodgers Blue Ribbon Catalog

it gives complete details and specifications

Rodgers Hydraulic Inc.
7437 Walker St., Minneapolis 16, Minn.

If you write maker identify as IEN - 8144

DECKER INDUSTRIAL FASTENERS

Decker Clinch Nuts are manufactured in a broad range of sizes to meet and speed every type of assembly operation. They are faster, easier to install . . . accurate and dependable. Cold-heading process affords extra-strong neck for clinching attachment. Double flat or plated clinch nuts available.

Whether you use cold-headed Pipe Plugs, Weld Nuts, hex type nuts or other special fasteners, Decker Industrial Fastener will add new efficiencies to your manufacturing and assembly operations.

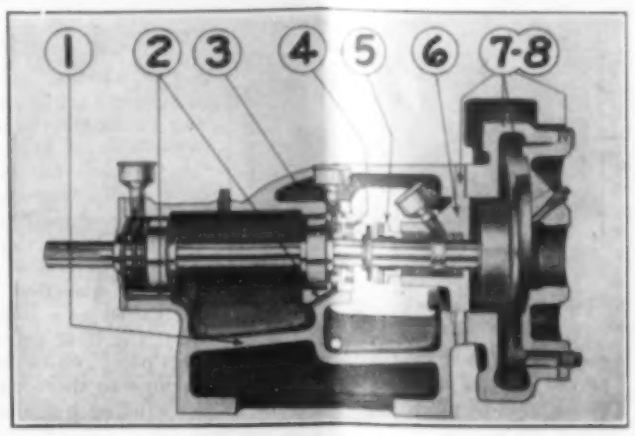
Request your copy of Decker's big illustrated Industrial Fastener catalog . . . today!

DECKER MANUFACTURING COMPANY
ALBION, MICHIGAN

If you write maker identify as IEN - 8145

PUMP . . Single stage centrifugal, 1 to 5 in., to 1,000 gpm., 250 feet

Source: DEMING COMPANY
186 Broadway, Dept. IEN, Salem, Ohio



Detailed in Bulletin 4011

Series 4011 designates a new end suction single stage centrifugal pump with a semi-open non-clogging type of impeller in three-vane construction for wear resistance in all types of service. Axial shaft adjustment can be made while the pump is running to permit regulation of capacity and head and for impeller wear.

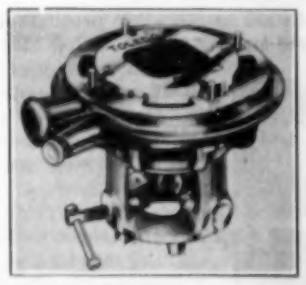
The mounting frame 1, at the driving end, as shown in the section view provides rigid support for the liquid end of the assembly. Relief holes 2 prevent over-greasing the radial and thrust ball bearings. Axial shaft adjustment is made at 3 by means of the adjusting nut 4 with its positive bolted type of locking device. The bolted split stuffing box gland 5 collects the drip. The stuffing box 6 is supplied in standard construction but the pump can be specified with a special box or with a mechanical seal.

The four piece liquid end assembly 7-8 permits quick service and maintenance. The suction head is removable for inspection of the impeller. The pump is available alone or with base mounting for belt drive for direct connection to a motor.

If you write maker identify as IEN - 8146

THREADING . . Pipe die head, hand ratchet operation, 1 to 2 inches

Source: TOLEDO PIPE THREADING MACHINE CO.
1445 Summit St., Dept. IEN, Toledo 4, Ohio



With cam type holder

Broad jaws provide for positive grip on a pipe to be threaded. Free cam action sets instantly to size, centering the work to assure correctly aligned threads in this new Sim-pact ratchet operated tool. The steel dies can be set quickly and positively for four pipe sizes, between 1 and 2 in., by pushing a size selector button, slipping the dies into their correct steps and turning the head slightly. A pipe can be threaded that projects through a wall not more than 6¼ inches. The dies recede along tapered steps as the threading action proceeds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8147

50 Packers at Belknap Hardware Can't Be Wrong About BOXER

Men who do the packing at Belknap Hardware and Manufacturing Company in Louisville, Kentucky can tell you about the on-the-job advantages of BOXER!

Like many companies faced with small carton closing problems, Belknap Hardware reports better packaging at lower cost. Says Mr. Charles A. Gage, Vice President:

"We have fifty packers using your BOXERS. They are practically unanimous in preferring the BOXER way. They say it's faster, cleaner, neater than our former method."

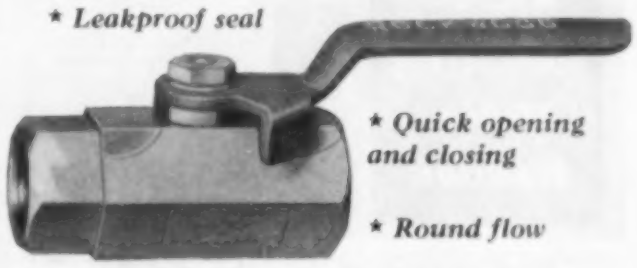
Get the facts on BOXER savings . . . BOXER speed . . . BOXER efficiency. Send for Bulletin B/101.

the Royal Family of Packaging ISM *International Staplers*

International Staple & Machine Company 805 East Herrin St., Herrin, Ill.

If you write maker identify as IEN - 8148

NEW lower cost steel ball valve delivers these ball valve benefits–



- *Leakproof seal*
- *Quick opening and closing*
- *Round flow*
- *Extra-long, trouble-free service*

Now — a choice of models in famous Rockwood ball valves!

Get the facts on the new, lower cost steel ball valve in ⅜" to 2" pipe sizes. Get the facts, too, on the original bronze ball valve in ⅜" to 2" pipe sizes — and the original steel ball valve in 3" and 4" pipe sizes.

Rockwood valves' special ball construction prevents leaks, makes possible quarter-turn openings or closings even under full pressure, permits round flow of fluids and gases, assures extra-long service. For further details, write Rockwood Sprinkler Company, 427 Harlow Street, Worcester 5, Mass.

ROCKWOOD BALL VALVES
For round flow efficiency

If you write maker identify as IEN - 8149

Now in its 6th year

NOPAK Shelf-Stock Service . . .

based on these 2 Standard Mounting, Class 1, Cushioned Cylinders

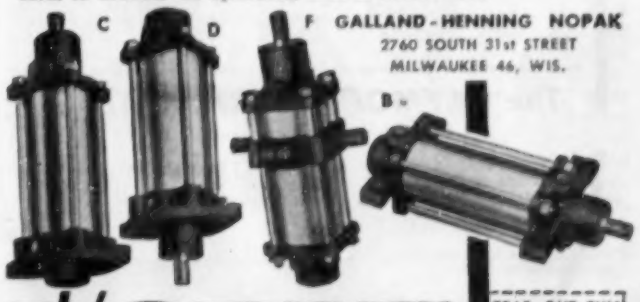
LIST PRICES F.O.B. Milwaukee, Wisconsin

STOCK STROKE LENGTHS — Double Acting Cylinders									
Cyl. Dia. Bore	1"	2"	3"	4"	6"	8"	10"	12"	15"
1½"	24.16	25.72	26.08	26.44	27.16	27.88	28.60	29.32	30.40
2"	26.24	27.88	28.32	28.76	29.64	30.52	31.40	32.28	33.60
2½"	32.36	34.12	34.68	35.24	36.36	37.48	38.60	39.72	41.40
3"	35.04	37.28	37.92	38.56	39.84	41.12	42.40	43.68	45.60
4"	40.84	43.68	44.52	45.36	47.04	48.72	50.40	52.08	54.60
4½"	48.96	51.92	52.88	53.84	55.76	57.68	59.60	61.52	64.40
6"	66.60	70.80	72.20	73.60	76.40	79.20	82.00	84.80	89.00
8"	____	126.80	129.20	131.60	136.40	141.20	146.00	150.80	158.00

By specifying NOPAK Shelf-stock, you buy quality cylinders at the lowest possible prices, you eliminate waiting for "specials", reduce engineering costs. Compare the prices and scope of NOPAK Shelf-stock (1½ x 1" to 8 x 15") with competitive offerings — and you will specify NOPAK.

● Basic mountings "A" or "E" convertible to "B", "C", "D" or "F", (see below) by changing cylinder heads. Add 10% to above prices, (no extra charge 8" bore). ● Piston Rods NF male thread. ● Cushioning can be eliminated on rod, blank or both ends by removing spring and ball-check.

NOPAK 4-Way Valves, hand, foot, solenoid, or pilot operated, to activate all cylinders, also in Shelf-stock.



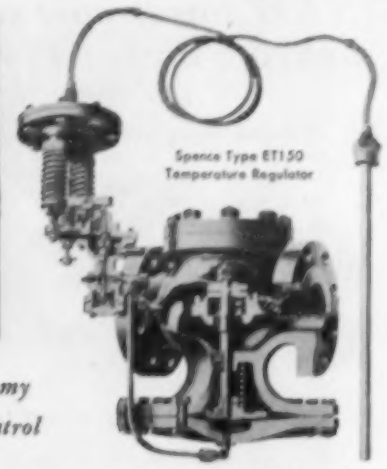
GALLAND-HENNING NOPAK
2760 SOUTH 31st STREET
MILWAUKEE 46, WIS.

NOPAK
VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

TEAR OUT THIS AD for Reference — or write for extra copies.

If you write maker identify as IEN - 8151

NO Reducing Valve Needed



Here's real economy in temperature control

Because Spence Temperature Regulators are designed to limit heater steam pressures to an adjustable maximum, the need for a separate reducing valve is completely eliminated.

This means one relatively small combination pressure and temperature regulator replaces a reducing valve of the same size and a larger temperature regulator. Practically the entire cost of the large separate temperature regulator is saved. And, the total saving would also include the cost of a 3-valve by-pass along with all labor for installation.

This design feature is just one of the reasons for the thousands of Spence installations throughout American industry. *For details of other important design features, write for Temperature Regulator Bulletin.* SE-137

SPENCE ENGINEERING COMPANY, INC. Spence
WALDEN, NEW YORK

If you write maker identify as IEN - 8152

RAYMOND

Hydraulic
PALLET LIFT TRUCK

AMERICA'S HEAVY DUTY Twins!

Hydraulic
SKID LIFT TRUCK

- IT'S A CINCH to handle heaviest pallet or skid loads with RAYMOND Hydraulic Lift Trucks! These husky trucks . . . built to deliver years of rugged wear . . . are truly America's heavy-duty twins.
- Both RAYMOND Trucks have powerful hydraulic assemblies to make load-lifting easy. Handles operate with long full strokes . . . or short strokes where space is limited. Handles are pressure-balanced to stay put in any position, won't fall when trucks are not in use.
- These trucks come with convenient finger-tip lowering . . . an exclusive RAYMOND feature. They're highly maneuverable, have full 360° turning radius for steering into or out of close quarters. Specially mounted, machine-faced wheels make 'em easy to pull over roughest floors and on upgrades.

The RAYMOND CORPORATION
3540 Madison St., Greene, N.Y.

Please send literature describing ☐ RAYMOND Skid Lift Trucks ☐ RAYMOND Pallet Lift Trucks ☐ RAYMOND Hydraulic Elevating Equipment Catalog.

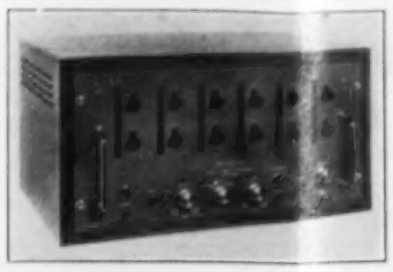
NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

MAIL COUPON

If you write maker identify as IEN - 8154

COUNTING . . Electronic instrument presets for two independent totals

Source: BERKELEY DIVISION
2200 Wright Ave., Dept. IEN, Richmond, Calif.



To 40,000 cps.

Coil winding, automatic packaging, sorting to length, motor control are typical applications for this new Series-5440 dual preset counter controller. Each turn added to a coil in a winding operation is registered as a count until the first preset count is reached. The signal provided at this point can be employed to slow down the coil winding machine so there will be no over-winding due to inertia in the winding assembly when the second preset count is reached.

The double preset count permits the first count to be used as a warning signal in automatic packaging prior to the final count so the operator can prepare the equipment for the start of the next run. Flat sheets can be sorted so lengths falling outside the desired value are rejected. In this case length is converted into voltage pulses and a kicker is actuated if the length is too short or too long.

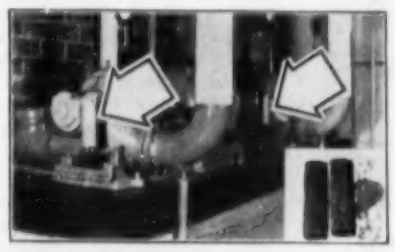
The counter can be employed in combination with an electronic digital rpm. indicator to control motor speed between desired limits. Similar combinations can be used to control pressure, temperature, frequency or other variable.

Three types of operation can be selected by positioning a function switch on the housing face. One is counting position in which an output occurs at the first or lower preset number and a second output occurs at the full capacity of the unit. In recycle position the outputs occur at both the first and second preset numbers, the second output resetting the counter to zero and initiating a new cycle. In the gate position the input pulses are gated off at the second preset number. Outputs are available at both preset numbers but the second number is displayed until cleared by pressing a reset button or by operation of an external reset circuit.

Preset is by rotating the two switches adjacent to each decade. The decades are electronic scale-of-10 units with two identical coincidence circuits. The instrument measures 20¾ by 10½ by 15 inches. It lists at $720 with count capacity from 1 to 10,000 as a representative example.

If you write maker identify as IEN - 8155

Two centrifugal pumps, installed to circulate presumably clean cooling water for air conditioning in a building, were plagued with wear in their water cooled shaft seals. The water actually contained minute particles of abrasive solids. The difficulty was eliminated by installing Micro-Klean filters in the small lines leading to the seals. The filters contain cartridges that collect a surprising amount of grit. They are replaced after 300 hours of operation. Cuno Engineering Corp., Dept. IEN, Meriden, Conn., manufactures the filters and replacement cartridges.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8156

TUBING THAT GUIDES "FLASH-THROUGH" MAY SOLVE YOUR PLANNING PROBLEMS

Even though it goes into shell fuzes, this "flash channel" may have a lot to do with your product. Reason: It guides detonating "flash-through"—which must travel in a *perfectly straight path.* So flash channels must be as precisely accurate as the tubing you use. Superior's cold drawn precision tubing was the only answer—just as it may be the answer to your current tough job. For Superior makes the industry's widest range of tubing analyses in hundreds of diameters and wall thicknesses and a variety of shapes. Write us today for more information and free Carbon and Alloy Steel Catalog. Superior Tube Company, 2016 Germantown Ave., Norristown, Pa.

All analyses .010" to ⅝" O.D.
Certain analyses in light walls up to 2½" O.D.

Superior Tube
THE BIG NAME IN SMALL TUBING

If you write maker identify as IEN - 8157

SHELDON
CHICAGO U.S.A.

OFTEN PAYS OUT ON THE FIRST JOB...
and gives additional years of "cost free" service.

In the past, lathes were generally bought as large and as heavy as possible to insure accuracy and sufficient power. Now, with accurate, low-cost Sheldon Precision lathes, it is more profitable to buy these faster, cost-cutting lathes for the specific job at hand just as you would buy jigs and fixtures.

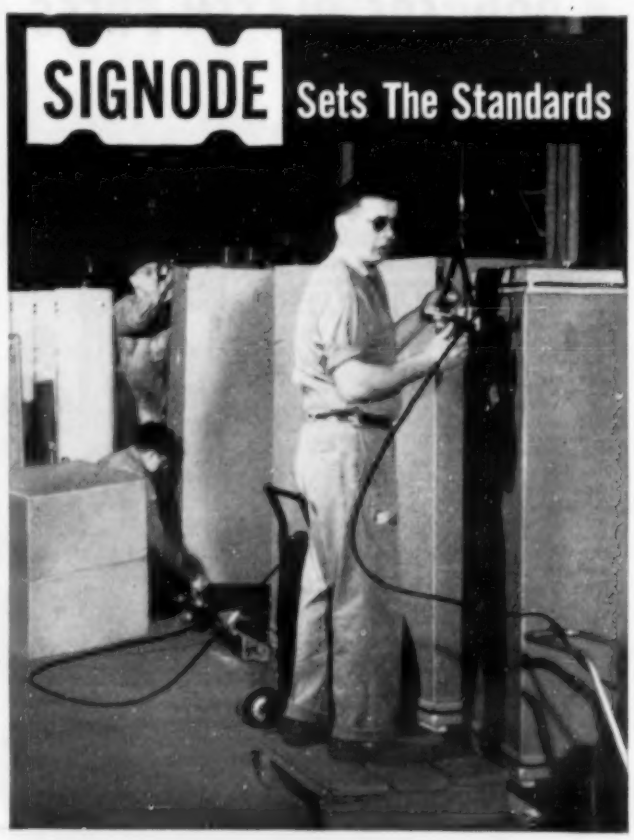
In savings of tooling costs, operator cost, power cost, and plant loading, as well as extra profits from more pieces per hour, Sheldon lathes often pay back their cost on a single run.

Sheldon lathes will work to the closest tolerances — have "Zero Precision" Taper Roller Bearings. They can take a healthy cut when operating at high speed direct drive—have double V-belts to the spindle. They will swing 10", 11" or 13" and have a 1⅜" hole through the spindle—have sufficient capacity for the great bulk of lathe work. Sheldon lathes have created a new factor for figuring machinery costs. They are tools you should know about.

Write for Catalog

SHELDON MACHINE CO., INC.
4208 North Knox Avenue, Chicago 41, Illinois

If you write maker identify as IEN - 8158



New Signode strapping system developed for interlocking flange containers

Water heater manufacturer straps 120 heaters per hour—2 every minute—using Signode Strapping System developed for interlocking flange containers. Here not only is a *new idea,* but a complete production line setup available to manufacturers for packaging their products. Here is a system that eliminates the bottlenecks that formerly prevented greater use of interlocking flange containers.

Other setups and tools designed by Signode for strapping interlocking flange containers also are available, including a special power machine and a new one-piece, one-hand strapping machine.

Ask to have a Signode fieldman show you how you can speed strapping of interlocking flange containers. Or, write for a special 4-page folder that gives a step-by-step preview of this new idea!

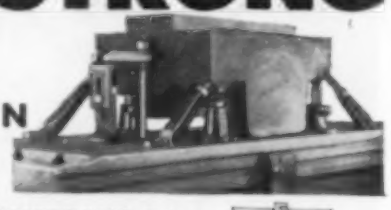
SIGNODE
STEEL STRAPPING COMPANY
2611 N. Western Ave., Chicago 47, Ill.

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 8160

ARMSTRONG

SET-UP *and* HOLD-DOWN TOOLS



ARMSTRONG Set-up and Hold-down Tools reduce setting-up time—keep men and machines producing. Designed for use on planers, drill presses, milling machines, etc., they hold work securely and rigidly, and thereby reduce spoilage and prevent costly accidents.

Your local Armstrong Distributor carries ARMSTRONG Set-up and Hold-down tools in stock in sizes for every operation. Stop haphazard setting-up methods. Provide each of your machines with a full complement of ARMSTRONG Set-up and Hold-down Tools.

Write for circular

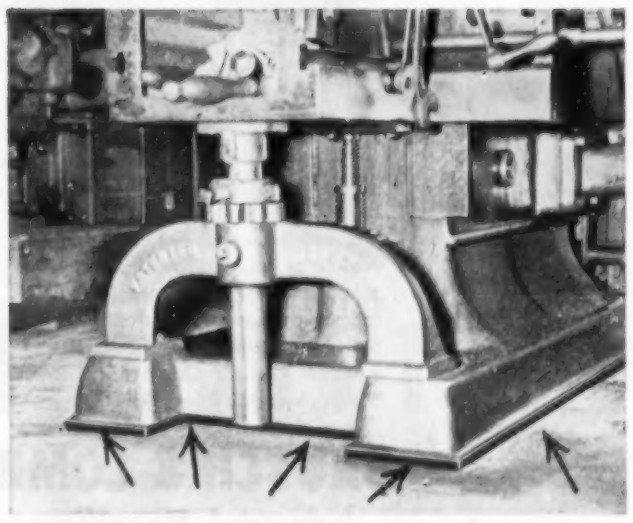
ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
5243 W. Armstrong Ave. • Chicago 30, U.S.A.

If you write maker identify as IEN - 8161

GALLOPING MACHINES STAY PUT WITHOUT BOLTS

when mounted on NYB&P's

Gilmer SHOCK PADS



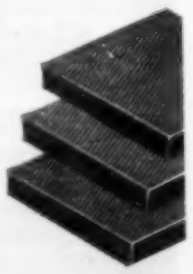
SAVE FLOORS... SAVE MACHINE DOWN-TIME!

UNTIL it was mounted on Gilmer Shock Pads more than a year ago, the shaper shown above used to shear its ⅝" mounting bolts every few months. This meant drilling out the sheared bolts, sinking new ones and resetting this heavy machine... all on *overtime*, since the shaper could not be spared during regular working hours.

The local NYB&P Distributor recommended mounting the shaper on ⅜"-thick Gilmer Shock Pads firmly attached to both the floor and the machine's base by means of Gilmer Shock Pad Adhesive, *without bolts*. Installation required less than two hours. Since the adhesive dries overnight, the shaper was ready for use the next morning... and has stayed put ever since!

Now, ten other machines in this plant have been mounted on Gilmer Shock Pads, facilitating mounting and relocating and materially reducing the noise and vibration formerly transmitted to the floors by these machines.

Gilmer Shock Pads are molded of neoprene in five thicknesses, providing for static loads up to 7 tons per square foot. They are highly resistant to oil, heat, water and cleaning compounds and do not harden or compact in use. Available from your NYB&P distributor in cut pads or in rolls. Gilmer Adhesive bonds firmly to wood, concrete or metal.

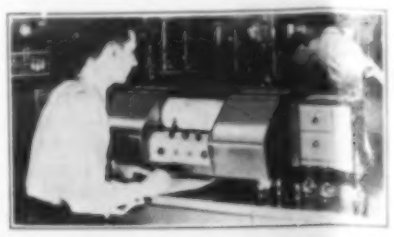


NYB&P NEW YORK BELTING & PACKING CO. 1 Market St., Passaic, N.J.
America's Oldest Manufacturer of Industrial Rubber Products

If you write maker identify as IEN - 8163

TESTING.. Spectrophotometer analyzes and records at high speed

Source: FISHER SCIENTIFIC CO.
717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.



For laboratory use

Spectracord trade names a new electronic instrument that will automatically scan and record the entire visible or ultraviolet spectrum in less than a minute. At its slowest scanning speed, using maximum resolution to separate the fine structure of a complex spectrum, it requires about 12 minutes. In normal operation a sample is inserted, the curve is drawn, the graph paper is changed and a second sample can be inserted in about 2½ minutes. The equipment is manufactured by Warren Electronics, Inc. It is distributed in the United States, East of the Rockies and in Canada, exclusively by Fisher Scientific.

Operation is normally in either of two ranges including the visible spectrum from 350 to 750 millimicrons or the ultraviolet range from 215 to 375 mu. The record is traced on preprinted graph paper measuring 11 by 17 inches. This paper shows each wave length for either the visible or the ultraviolet range. Operation is on input at 110-volt 60-cycle ac. Photometering accuracy is within 0.5 per cent of full scale. Precision is within 0.2 per cent. A switch is provided to convert the instrument for study of emission spectra, fluorescence, polarization phenomena. List price is $5,600.

If you write maker identify as IEN - 8164

WELDING.. Motor driven positioner supports and rotates cylindrical work

Source: ARONSON MACHINE CO.
Dept. IEN, Arcade, N. Y.

Patented design

TracTred Turning Roll trade names a new patented assembly of single, double or triple-strand roller chain with work supporting lugs to ride on sprockets mounted on a structural base. One of the chains and two of the sprockets are employed as a unit with a driving motor, push button control and variable speed transmission for stepless adjustment to 100 inches per minute. The other assembly of two sprockets and base acts as the idler and also as the means to conduct weld ground current from the work so no other ground connection is required to the work itself. The idler roll is equipped with brass chain pads for this purpose. Current carrying capacity is to 600 amp. for the single strand chain, 1,500 amp. for the triple strand assembly.

The positioner is suited particularly for thin wall work for which it eliminates need for additional supporting rings. Its rubber face chain, on the power unit, provides firm, smooth traction so work that is out of balance can turn without difficulty. There is no tendency for axial creep. Load capacity is 6,000 to 18,000 pounds. Work diameter range is from 4 to 10 ft. on the smallest of four available assemblies. It is 10 to 16 ft. on the largest.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8165

Check Temperatures Instantly... Accurately with *Alnor* TYPE 1500 PORTABLE PYROMETER

Wherever temperature readings are required—on the production line, in the laboratory or in the field—this sturdy precision instrument can bring you instant, accurate results.

Here's Why

It's Fast...in operation and quickly read. Precision movement designed to laboratory standards. Direct reading scale face is easily understood—no slide wires or conversion tables necessary.

It's Accurate . . . consistently to within ¾ of one percent under almost all variable conditions. Sturdy, protective case assures continued accuracy in toughest portable service. Ten scale ranges available, from 0-400° to 0-3000°F. Equivalent Centigrade scales available at no extra cost.

It's Portable . . . compact size, 6½"x6"x3", and light weight make this pyrometer highly portable and easy to use anywhere. Write today for complete details and prices. Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle Street, Chicago 10, Illinois.

Send for Bulletin on 1500 Pyrometer.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 8166

KODAK SIGNET 35 CAMERA—the ideal 35mm. camera for most photographic needs.

Easy-to-use camera for hard-working pictures

You'll find it easier to train... to demonstrate... to illustrate technical talks... and do countless other important jobs with 35mm. slides and prints. Job setups, breakage claims, safety hazards, research results, maintenance data—all can be photographed for study, circulation, and reference. And with a camera small enough to slip into your pocket for use as you walk through the plant.

The Kodak Signet 35 Camera has all the advanced features you need for taking quality industrial photographs. Yet it's as compact and easy to operate as your family snapshot camera. A coupled rangefinder takes the guesswork out of focusing—three simple settings with handy finger-tip controls make accurate operation a snap. Sensibly priced at $92.50, including Fed. Tax.*

WRITE FOR FREE BOOKLET on Kodak Signet 35 Camera.

EASTMAN KODAK COMPANY
Rochester 4, N. Y.

**Price quoted is subject to change without notice.*

If you write maker identify as IEN - 8167

New... Air Drill World's Smallest

It's Really Amazing!

- 3/16" HEAVY DUTY DRILLING
- 1/4" LIGHT DUTY DRILLING
- NEARLY 1/4 H.P.... STALLPROOF
- WEIGHS LESS THAN 1½ LBS.
- USES 38% LESS AIR

Highest precision construction makes this drill revolutionary!

Write ARO or see your ARO distributor.

THE ARO EQUIPMENT CORP., BRYAN, OHIO

Offices in All Principal Cities
In Canada—Aro Equipment of Canada, Ltd., Toronto, Ont.

ARO AIR TOOLS
Also... AIR HOISTS... LUBE EQUIPMENT... AIRCRAFT PRODUCTS... GREASE FITTINGS

If you write maker identify as IEN - 8168

WHEN ARE TWO HEADS BETTER THAN ONE?

FLAT SPRING STEEL is constantly being purchased for completely new end uses. In most of these new applications the desired results are achieved. If, however, the Flat Spring Steel does not perform as hoped, the steel used may be unsuitable for the job, or something may be askew in the material's application.

That's when two heads can be better than one! Roebling is just about the nation's largest producer of High Carbon Flat Spring Steel...and Roebling laboratories are always glad to cooperate with manufacturers, designers and engineers who have a problem child. Send details to Wire and Cold Rolled Products Div., John A. Roebling's Sons Corp., Trenton 2, N. J.

A subsidiary of The Colorado Fuel & Iron Corporation

ROEBLING

If you write maker identify as IEN - 8169

BETTER rolls

Get the facts on Camachine Model 26-3A slitter-rewinder for fast, low-cost production of better rolls of plain or tacky-coated papers and fabrics. Speeds up to 400 fpm. Strip as narrow as ½" (¼" with special slitters). See other Camachines for other materials.

CAMERON MACHINE COMPANY
61 Poplar Street, Brooklyn 1, N. Y.

If you write maker identify as IEN - 8170

THIS NEW BOOKLET MAY HELP YOU CUT COSTS 5% TO 25% ON COMPONENT PARTS

You can find out how Steel Plate Shapes Service saves both time and money. Other equipment builders have cut their costs from 5% to 25% by using pre-formed component parts. Here's how.

Steel plate shapes are accurate, can be incorporated quickly and easily into assemblies. You save fit-up time, free machines for other work, speed your entire operation. Plate shapes of rolled steel give you strength, dependability and weight reduction, offer greater possibilities for design freedom.

Steel Plate Shapes Service enables you to reduce plate inventories. You cut scrap handling costs and scrap losses, pay freight only on that part of the plate that is actually required. Over 150 major machines are available to flame-cut, shear, blank, press, bend or otherwise form steel plate to your specifications. Parts can be furnished as formed, or rough- or finish-machined. A large stock of standard dies of all types is maintained.

THIS FREE BOOKLET will show you how Steel Plate Shapes Service can help you cut costs. To get a copy of Booklet 712 at no obligation, use this coupon or write on your company letterhead to: By-Products Steel Co., 675 Strode Avenue, Coatesville, Pa.

LUKENS **BY-PRODUCTS STEEL CO.**
A DIVISION OF LUKENS STEEL COMPANY

By-Products Steel Co.
675 Strode Avenue, Coatesville, Pa.
Please send me a free copy of Booklet 712.

NAME_____
TITLE_____
COMPANY_____
CITY_____ ZONE____ STATE_____

If you write maker identify as IEN - 8172

CLEANING . . Water separator tank applies with standard vacuum machine

Source: HILD FLOOR MACHINE CO.
740 W. Washington Blvd., Dept. IEN, Chicago 6, Ill.

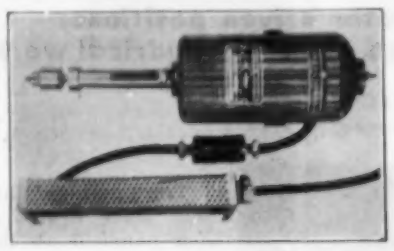
To dump when filled

Add-A-Tank is a new 25-gal. tank with removable lid and hose connections to apply with a standard vacuum machine for wet pick up. The tank is available with its own wheel carriage for hose connection to the vacuum machine and to the suction pick up tool. It also can be supplied for application with the vacuum machine, as shown in the illustration on a user's track, so the machine and tank apply as a single unit. It is recommended for use with the company's Model 115 wet and dry vacuum machine. The two units together then provide 35-gal. wet pick up capacity.

If you write maker identify as IEN - 8173

DRILLING . . Variable speed motor and integral spindle for small holes

Source: ELECTRO-MECHANO COMPANY
261 E. Erie St., Dept. IEN, Milwaukee 2, Wis.



Any position

The company has developed a new high speed spindle unit with a variable speed governor controlled motor and integral spindle for use in special drilling, reaming and grinding machines. Speed ranges from 1,000 to 10,000 rpm. or from 2,500 to 15,000 rpm. and is selected by moving a pointer that rides in a slot in the motor housing. An electric governor keeps the speed constant while idling or drilling.

The unit can be mounted in any position. It is available for operation on 110 or 220-volt single-phase ac. The motor rates ⅛ hp. at 6,000 rpm. Chuck capacity is to 5/32 inch. Housing diameter is 3¾ inches. Quill extension is 5 in. to the end of the chuck on the new unit.

If you write maker identify as IEN - 8174

Dust is kept out of the card slot on a time clock by a new combination of hinged cover and spring operated timer for application above the slot. Lifting the cover, which normally covers the slot, by moving the lever arm upward also winds the timer to operate for 15 minutes. At the end of this interval the cover is swung back down to closed position. Installation can be made in about 5 minutes. List price is $12.50. Time Equipment, Box 2059, Dept. IEN, Fort Wayne 3, Ind. is the manufacturer of the new combination assembly.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8175

Brainard Strapping Tape SPEEDS PACKAGING AND REINFORCING

● Streamline your package closing, reinforcing, bundling, holding, and palletizing with Brainard Strapping Tapes—either pressure-sensitive or gummed. Brainard offers a complete line of dispensers, like the hand dispenser shown above, which permits fast tape application, holds rolls up to 8" in diameter and has a patented corrugated cut-off blade. Brainard's complete Strapping System includes steel strapping and strapping tapes—assuring you of unbiased recommendations.

Brainard
STEEL DIVISION
SHARON STEEL CORPORATION

For booklet write:
BRAINARD STEEL DIVISION
Dept. 11-7, Griswold Street
Warren, Ohio

If you write maker identify as IEN - 8176

ANGLE STEEL STOOLS

for
- CAFETERIA
- SHOP
- CLASSROOM

and many other uses

Angle steel offer a diversified line of stools developed over a period of almost 50 years devoted to the producing of posture perfect seating.

No. 21 - E - 24

No. 24 - E - 28

Numerous models are available to fit any seating need. Wide range of styles, heights, seats and back rests can be had on both stationary and revolving stools. Seats are offered in wood, round or saddle styles and round steel. The adjustable back rests can be had either of wood or steel.

For additional information write for CATALOG No. 300—Sept. 1953

ANGLE STEEL, Inc.
Plainwell, Mich.

If you write maker identify as IEN - 8177

ILLUMINATED MAGNIFIER

Write today for tell-all handbook and catalog, "INDUSTRIAL MAGNIFIERS, HOW TO CHOOSE AND USE THEM"

for inspection and assembly

Operator has both hands free. Complete unit including adjustable stand, with precision wide-field lens designed for use at "normal" working distance from eyes. $13.50. See complete line of industrial magnifiers $1 to $25, stocked by leading industrial suppliers. Bausch & Lomb Optical Co., 51531 Bausch St., Rochester 2, New York.

B&L **BAUSCH & LOMB**
Industrial Magnifiers

If you write maker identify as IEN - 8178

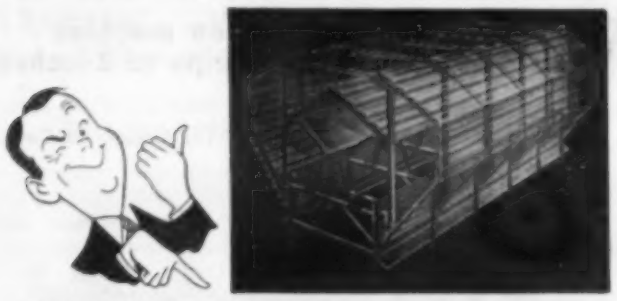
NEW MANUFACTURING TECHNIQUES DRASTICALLY CUT COSTS OF . . .

3-DIMENSIONAL SCALE MODELS

Complete plant layouts . . . standard or special machinery and miscellaneous equipment available. Over 12,000 items in stock. Prompt deliveries.

VISUAL PRODUCTION PLANNING, INC.
Connellsville, Pennsylvania

If you write maker identify as IEN - 8179



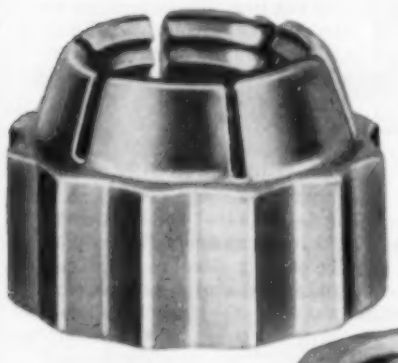
WHERE HIGH HEAT OR FUMES REQUIRE LARGE EXHAUST VOLUME GET MOST AIR PER DOLLAR WITH BURT MONOVENT

The Burt Monovent Continuous Ridge Ventilator converts the entire roof ridge to a gigantic, quick-acting air valve. It exhausts air at the highest point for greatest efficiency. It vents air uniformly along the entire length of the building. Its appearance is pleasing and its simple, heavy construction assures long, trouble-free life with little maintenance. Standard sizes from 4" to 96" handle practically any structure. See Sweet's for complete date or write for Burt Monovent Bulletin SPV-6.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company
909 South High St., Akron 11, Ohio
MEMBER POWER FAN MANUFACTURERS ASSOCIATION

If you write maker identify as IEN - 8180



This 12-Pointer is made in comparable dimensions in all popular sizes of standard nuts as well as "Huglock" and "Marsden" locknuts. "Huglock" and standard types illustrated.

12 POINTER

something new in NUTS

The 12-Pointer Nut was designed to allow the use of thin wall socket wrenches for high torques and heavy drives, especially where tool clearance is a factor. The basic problem involved, where thin wall socket wrenches are used on nut runners to drive hexagon nuts, is breakage at high torque. By providing twelve points on the nuts to mate with the 12 lands in double hexagon sockets, the driving loads are distributed so that thin wall socket wrenches of smaller outside diameter can be used without breaking. Fasteners may be more favorably placed and reductions in weight and material are possible through reduced tool clearances. This 12-Pointer is made in comparable dimensions in all popular sizes of standard nuts as well as "Huglock" and "Marsden" locknuts . . . *Send for 12-page brochure that supplies complete specifications, engineering data and prices.*

NATIONAL MACHINE PRODUCTS COMPANY

Manufacturers of standard and special hexagon nuts . . . "Huglock" and "Marsden" locknuts.

44239 Utica Road, Utica, Michigan

If you write maker identify as IEN - 8182

CRANE . . Wheel mounted assembly, engine drive for yards, construction

Source: SMITH HOIST MFG. CO.
S. O'Keefe St., Dept. IEN, Cassopolis 12, Mich.

Controlled at winch

A load weighing 1,200 lb. can be lifted to 20 ft. or more above the ground with this new Hi-Boom Hoist-Master portable crane. Its 56-in. boom stands 25 ft. above the ground at the top of the fabricated steel tube mast. The mast is pivoted on its supports to the boom and can be swung to either side. It can be locked in set position. Drive is by an 8-hp. two-speed gasoline engine and wire rope winch. A tray, above the trailing caster wheels, provides space to place counterweights when they are required. The crane is made in four sections that can be taken apart and reassembled quickly. The swivel casters are fitted with brakes and swivel locks.

If you write maker identify as IEN - 8183

FASTENING . . Nylon lacing tapes to secure electric harnesses and coils

Source: GUDEBROD BROS. SILK CO.
225 W. 34th St., Dept. IEN, New York 1, N. Y.

Technical data upon request

Gudelace, with a wax finish, and Gude-Nylace, in plain nylon weave, are new lacing tapes. The former can be employed in a temperature range between minus 67 and plus 200 deg. F. Both comply with fungus resistant requirements of Government Specification JAN-T-713.

Each tape is available in three widths, the Gudelace measuring 0.047, 0.090 and 0.25 in. with approximate thickness at 0.008, 0.0125 and 0.013 inch. Gude-Nylace measures 0.05, 0.09 and 0.20 in. in width by 0.0075, 0.0125 and 0.015 in. in thickness. The lace is available on 250-yd. spools. Colors are natural, white or black.

If you write maker identify as IEN - 8184

DRAFTING . . Transparent template to letter and dimension a drawing

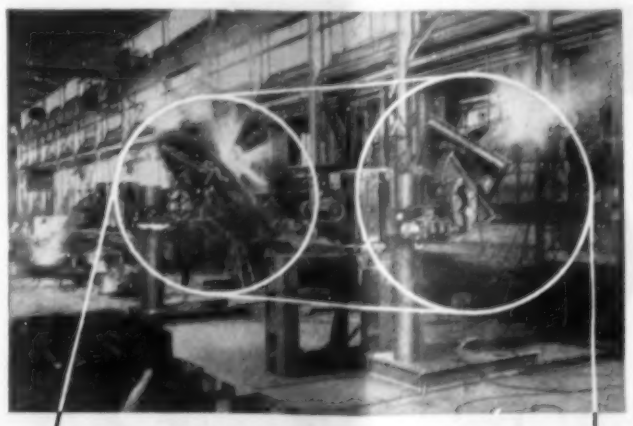
Source: RAPIDESIGN INCORPORATED
Box 592, Dept. IEN, Glendale, Calif.

List price is $1.50

Alphabet Template No. 135 is a new transparent plastic unit measuring 6¼ by 3¾ inches. It carries ⅜-in. block letters and three guide slots, for free hand lettering, in heights measuring ⅛, ¼ and 3/16 inch. The corners are rounded for radii measuring ¼, ½, ¾ and 1 inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8185



More WELDING going on here....

More welding and less time spent in flopping, crawling up and crawling around weldments is the end result of the C-F Positioners in this welding department.

Mounted on C-F Welding Positioners, weldments can be quickly brought into position for a downhand pass — better, more uniform welds with resulting economies and production increases follow. Welders spend more time welding when they work with C-F Positioners because on "set-up" on the table allows them to maneuver the job without assistance, whether hand or power operated Positioners are used.

Power operated, variable speed C-F Positioners with table rotation speeds in any range from 0 RPM and up, coupled with table tilt to 135° from the horizontal make them the logical choice for any production welding operation. Like all C-F Positioners, they have drilled tables for easy set-ups or tables can be quickly removed for installation of special fixtures or jigs. Write for Bulletin WP 26. CULLEN-FRIESTEDT CO., 1310 S. Kilbourn Avenue, Chicago 23, Illinois.

C-F positioned welds mean better, more economical welds

CULLEN-FRIESTEDT CO., CHICAGO 23, ILL.

If you write maker identify as IEN - 8186

AIM for preset tension on your steel strapping

Acme Steel offers the only complete line of PNEUMATIC STRETCHERS

These new time-saving Acme Steel Strapping Tools can be set in advance for uniform, consistent tension. There's no guesswork. The Pneumatic Stretchers do the work—reducing employee fatigue. There are Acme Steel Pneumatic Stretchers for tensioning strapping on all sizes and shapes of containers, packages and bundles . . . and a model to suit your needs. For details, write Acme Steel Products Division, Dept. KL-74, Acme Steel Company, 2840 Archer Avenue, Chicago 4, Illinois.

AIM *for Safe, Lower-Cost Shipping* — ACME STEEL

If you write maker identify as IEN - 8187

TRUFLEX® J7

Thermostat Metal Resists Water Corrosion

It's natural for a duck to take to water. And it's natural for General Plate *Truflex* J7 Thermostat Metal to operate without corrosion in water. Take for example the shower mixing valve illustrated. This and similar coils have operated continuously in showers and hot water tanks for over 15 years without failure due to corrosion.

Other *Truflex* J7 Thermostat Metal coils are operating successfully in such applications as hot water temperature measuring valves, tanning applications which often operate in mild acids, radiator valves and the like.

You, too, can obtain constant and accurate performance in your products because General Plate fabricates to your exact specifications, complete *Truflex* thermostat metal units ready for installation. You get reliable performance because every order comes to you an exact duplicate of the original . . . consistently uniform in tolerances, temperature reaction and performance, thus preventing rejects and costly adjustments in assembly.

For you who desire to manufacture your own parts, *Truflex* Thermostat Metals are available as strip in coils or flat cut lengths. Write for engineering assistance and catalog.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
77 FOREST ST., ATTLEBORO, MASS.

If you write maker identify as IEN - 8188

If you write maker identify as **IEN - 8189**

IT'S NEW!

CANNON MULTI-FEATURE WATERPROOF POWER PLUG

New Cannon connector features two 200-amp. contacts for No. 0 flexible, rubber covered power cables.

Check the importance of these features in your operation! (1) Automatic all-point weather sealing. (2) Spring-loaded snap covers to prevent entrance of dust and moisture when disconnected. (3) Worm-gear "squeeze" type cable clamps for positive sealing. (4) Automatic latching. (5) Safety over-stress release. (6) Contacts removable for soldering or replacement. (7) Resilient bodies for completing mated seal. (8) Steel shells for hard usage. (9) Corrosion protected.

Write TODAY for full information.

CANNON PLUGS

Please Refer to Dept. 11
CANNON ELECTRIC COMPANY
3209 Humboldt St., Los Angeles, Calif.
Factories in Los Angeles; East Haven; Toronto, Canada; London, England. Representatives and distributors in all principal cities.

If you write maker identify as **IEN - 8190**

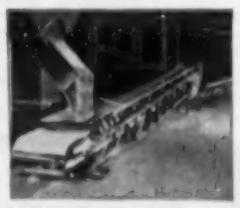
Typical packaged-materials-handling installation. Farquhar Conveyors stack, pile, store or move packaged materials from floor to floor faster and easier . . . make costly elevators unnecessary . . . cut your materials-handling costs to the bone.

Cement, fertilizer, foods, lime, and many other bagged materials move rapidly and continuously on Farquhar Conveyors the world over.

You Name It... We'll Move It!

Specify Farquhar for your Conveyor Problems!

SURE, there are probably some things that Farquhar Conveyors can't handle—like elephants, or battleships. But by and large, no matter what your conveying problem, Farquhar Conveyors can solve it. AND solve it at the *lowest* possible initial cost, *greatest* possible efficiency, and *smallest* possible unkeep!



Bulk materials — chemicals, sand, stone, etc.—present no problem when they're handled by Farquhar Conveyors.

Big claims? Sure! But Farquhar can back them up! Case histories in our files prove that Farquhar Conveyors are designed better, stand up better in use, and deliver greater efficiency and versatility. If you'd like to read about some of these success stories, mail the coupon below for your free copy of "Owners Report."

A complete line of Farquhar Roll-Free roller and wheel conveyors let gravity do the work for you!

Your particular problem may be similar or slightly or radically different from those in this booklet. Regardless, the same Farquhar experience, know-how and engineering skill that solved problems for people like you all over the world . . . can solve *yours!* A note on your letterhead will bring a Farquhar sales-engineer on the run—at no obligation, of course!

FREE! "Owners Report"—a booklet of case histories of money-saving conveyor installations.

OLIVER Farquhar CONVEYORS

POWER-BELT AND GRAVITY CONVEYORS

THE OLIVER CORPORATION
A. B. Farquhar Division
Conveyor Dept. U-32, York, Pa.

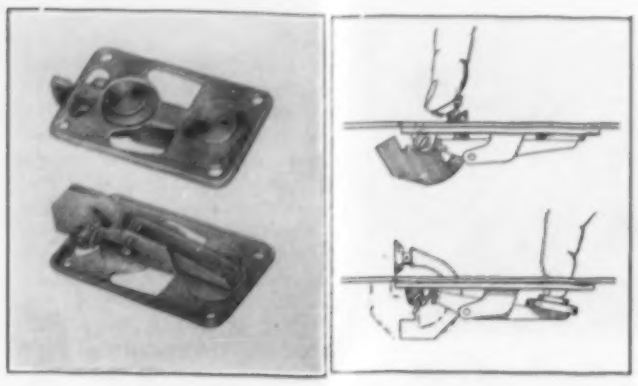
Gentlemen:
Please send me my free copy of "Owners Report."

Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

If you write maker identify as **IEN - 8192**

FASTENING . . Flush latch, press to lock and press to release

Source: HARTWELL COMPANY
9035 Venice Blvd., Dept. IEN, Los Angeles 34, Calif.



This and other designs in Bulletin H2

Type H-2 is a new flush latch assembly in the company's line, previously described IEN-3474-53. It mounts on the under surface of a door panel so its latch and trigger buttons lie flush with the door frame surface. The latch button is pressed, for bolt rotation through 90 deg., to bring the face of the bolt into locking position beneath the door frame. A trigger lever, operated by the second button, snaps into locked position where it is held by a spring.

Pressing the trigger button releases the lock connection and permits the spring, which was wound when the bolt button was pressed, to retract the bolt release and door. Assembly is in a plate measuring 1½ in. in width by a little over 2⅜ in. in length. The two buttons ride inside ⅝-in. holes drilled in the door panel. Mounting is by means of four rivet or bolt holes near the four corners of the plate. The latch can be specified for door panels of various thicknesses.

If you write maker identify as **IEN - 8193**

LADDER . . Tubular steel frame, caster mounted, wood steps, platform

Source: R. W. FIEROH COMPANY
3401 S. Hoyne Ave., Dept. IEN, Chicago 8, Ill.

Patent 2479736

Model 90-5W, with 10 steps on a standard slope, is new in the company's Handy-Jack line of portable Stair Stands. The new unit is made of steel tube in welded assembly with casters beneath the feet at one end and casters under handle equipped jacks at the opposite end. When these handles are raised, the casters move in under the stairway so it rides free from the floor and can be moved from one location to another.

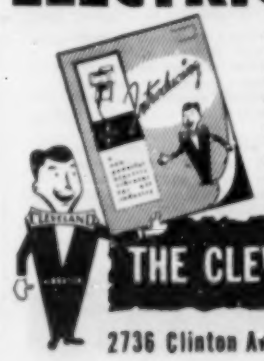
The steps measure 8 by 24 inches. The platform measures 24 by 24 inches. Wood is standard for both steps and platform but non-skid checkered plates or 10-gage expanded metal steps and platforms can be specified. List price with standard 3-in. wheels is $112. This is increased to $122 when heavy duty 5-in. wheels are specified. Steel plate steps add $8.70. Finish is in gray enamel.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8194**

NEW COMPACT POWERFUL

ELECTRIC VIBRATOR



To speed the flow of stubborn material from hoppers, bins and chutes of all sizes and shapes.

Obtainable in all voltage, phase and cycle requirements.

Write today for complete literature.

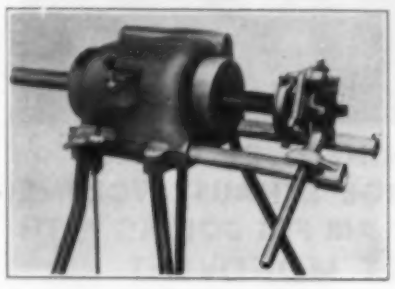
THE CLEVELAND VIBRATOR CO.

2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as **IEN - 8195**

THREADING . . Motor driven machine with power chuck for pipe to 2 inches

Source: GAINES-COLLINS COMPANY
5474 Alhambra Ave., Dept. IEN, Los Angeles 32, Calif.



Switch controlled

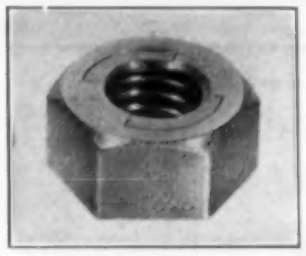
Thred-O-Matic is a new chuck equipped motor driven head equipped with a switch controlled double chuck. The head is intended for use with hand threading tools and geared die heads. It will cut bolts from ⅝ to 1¼ in., pipe or conduit from ¼ to 2 in., or, with a universal drive shaft geared tool, it will cut pipe to 12 inches.

Assembly is in an aluminum housing for an overall weight of about 100 pounds. Application can be made on a bench, in a truck or on pipe legs. Drive rating is about 2 hp.

If you write maker identify as **IEN - 8196**

FASTENING . . Locknut, top deflected thread grips bolt

Source: MACLEAN-FOGG LOCK NUT CO
5535 N. Wolcott Ave., Dept. IEN, Chicago 40, Ill.



Bulletin, "Uni-Torque"

The company announces development of a new Finished Series in its "M-F" Uni-Torque lock nut line. The new series replaces the old American Standard Light and American Standard Regular Semi-Finished nuts. It is furnished with either National Fine or National Coarse threads. Sizes range from ¼ to 2 in. in full and jam thicknesses.

Friction, induced because of the deflection of the top thread, causes the nut to bind on the bolt threads and lock in any position on the bolt. It does not require seating. Steel nuts are carried in stock. Brass, bronze, aluminum, stainless steel and other materials can be specified.

If you write maker identify as **IEN - 8197**

Owners of the hook suspending crane scale made by A. H. Emery Company, Grove & Pine Sts., Dept. IEN, New Canaan, Conn., can now obtain a new 4-wheel rubber tired Transport Dolly on which to place the scale when it is not in use. It carries the scale in upright position ready to return to the crane hook. It rides easily, weighs 75 pounds, lists at $75.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8198**

give your product a BIG LIFT *with* GUARDIAN® SOLENOIDS

Yours—Guardian's New SOLENOID BULLETIN just off the press! Get your free copy describing the complete new Guardian line of AC and DC Solenoids (Continuous and Intermittent Duty) with Operating Data and dimensional drawings. Adjustable plunger strokes vary, to specification, from 1/16 inch up to 2 inches, lifting any required weight of less than 1 oz. up to 9 lbs. New, compact "Power Type" Solenoids feature laminated coils that provide a *big lift* for a positive, fast, full stroke. Guardian will gladly work with you on your experimental projects where solenoids are used singly or in combination with Steppers, Relays, Switches and other electrical components.

NO. 1G A. C. SOLENOID

NO. 14 A. C. SOLENOID

WRITE or wire today for your Free Copy of this New 8-Page Guardian SOLENOID BULLETIN "SOL-8" including the new Power Types.

GUARDIAN ELECTRIC
1620-H W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as **IEN - 8199**

CLEANING . . Vacuum machine employs removable motor-blower unit

Source: MULTI-CLEAN PRODUCTS INC.
2277 Ford Parkway, Dept. IEN, St. Paul 1, Minn.

Blower unit, 16 pounds

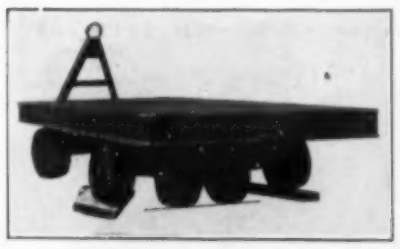
Type F-300 is a new portable vacuum cleaning machine with a 10-gal. caster mounted tank and cover equipped with quick acting clamps. The cover mounts a motor driven blower that can be removed and used as a portable cleaning unit, in connection wth a dust bag, independent of the tank. The blower unit is a sealed ball bearing design with a 1-hp. 110-volt motor.

The blower delivers air at 220 cfm. for blowing or produces suction of 43 in. of water lift. The dust bag presents 1,625 sq. in. of filtering area. The equipment is supplied with a 22-ft. three-conductor Type-SJ extension cord and plug.

If you write maker identify as **IEN - 8200**

TRUCK . . Platform trailer for operation over uneven ground

Source: MERCURY MFG. COMPANY
4044 S. Halsted St., Dept. IEN, Chicago 9, Ill.



Built to order

Load rating is 15 ton and platform dimensions are 120 by 60 in. in this new heavy duty trailer. Construction is characterized by the double compensating axle assembly with the four rear wheels. This arrangement enables the trailer to ride over uneven ground without disturbing its load. Steering centers at a fifth wheel double ball bearing race turntable at the center of the front axle.

The wheels measure 15 by 8 by 11¼ in. and are fitted with pressed-on solid rubber tires. The platform stands 22¾ in. above the ground and is faced with a 3/16-in. checkered steel plate. A loop handle hitch is provided at the front and a C-type coupler at the rear.

If you write maker identify as **IEN - 8201**

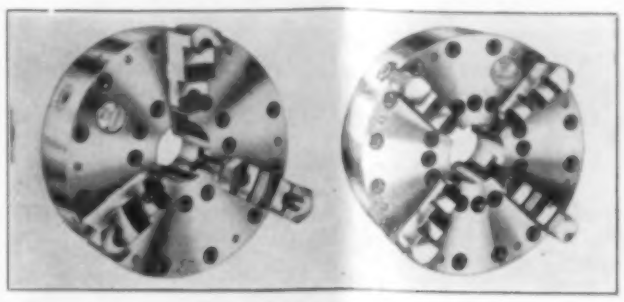
Super Ustex-Nylon is a new conveyor belt in which chemically treated cellulosic yarn is employed as the longitudinal load carrying part of the belt fabric. Strength is comparable to steel cord. It rates better than the cord in that it will not corrode. Nylon is used in the crosswise portion of the fabric to provide flexibility. One of the new belts, 42 in. in width, is carrying coal in an underground installation at the rate of 1,000 ton per hour. The belt is made by United States Rubber Co., 1230 Sixth Ave., Dept. IEN, New York 20, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8203**

CHUCK . . Segment plate design, universal and independent assemblies

Source: WHITON MACHINE CO.
190 Howard St., Dept. IEN, New London, Conn.



Bulletin, "Whiton Chucks"

The jaw slots in this new segment plate chuck are formed in separate plates mounted on the chuck body. The plates are hardened and finish ground before being assembled on the body so the slots are accurate and possess excellent wearing qualities. Precise fit can be maintained indefinitely. The segment plates can be mounted on a heat treated steel body made of ductile iron or of aluminum alloy.

The three-jaw universal geared assembly is available in 8 to 15-in. diameters for direct application on American Standard spindle noses Type A, D, L. Each chuck in this line is supplied with Style No. 6 American Standard tongue and groove reversible jaws. List price ranges from $316 to $568.

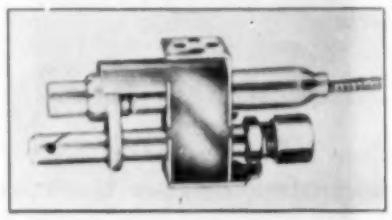
The four-jaw independent design is made in 8 to 18-in. diameters, also for direct application on American Standard spindle noses Type A, D, L. These chucks are available with solid reversible or Style No. 6 American Standard tongue and groove reversible jaws. List price ranges from $258 to $851, depending on size and design.

The line includes three-jaw and four-jaw universal and independent chucks for light duty at high spindle speeds in sizes ranging from 6 to 10 inches. List prices range from $188 to $284.

If you write maker identify as **IEN - 8204**

HEATING . . Gas burner pilot cannot be clogged by dirt in the air

Source: GENERAL CONTROLS CO.
801 Allen Ave., Dept. IEN, Glendale 1, Calif.



Operates steadily

Primary air, for operation of a pilot flame in this new No. 260S and 26S pilot burner, or the new No. BG-9 Snorkel pilot generator, is drawn under the pilot flame before it is mixed with gas in a cool sealed chamber. Dust and lint are brought into contact with the flame so they are incinerated to leave the intake air clean and free of airborne particles.

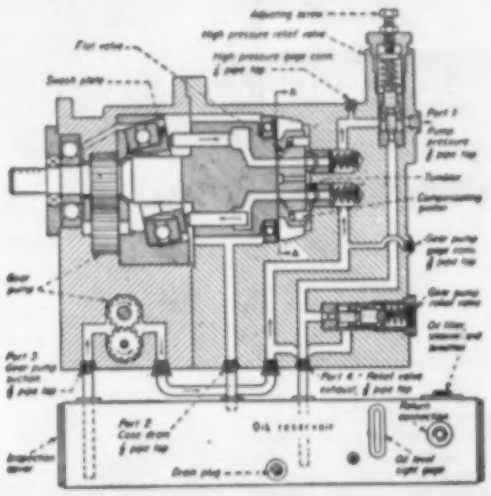
Low temperature in the mixing chamber avoids cracking the gas. The result is a crisp steady blue pilot flame that is not subject to clogged ports or an unsteady mixture of primary air and gas. The new units are now available for the company's thermocouple operated safety and self-powered control installations.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8206**

HEAVY DUTY HYDRAULIC POWER PUMPS

Pressures to 3000 & 5000 psi



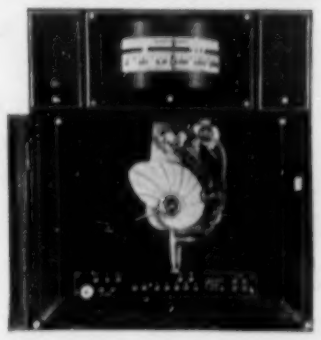
The Oilgear Company announces three new "Fluid Power" heavy-duty constant delivery axial piston pumps. Similar components have been tested and proven in more than 100,000 installations without a single failure on record. Features of these fluid power generators are: patented balanced small flat valves with controlled oil film between working surfaces; patented small one piece rolling pistons; patented quiet reverse flow relief valves; 100% supercharge that minimizes oil compression, prevents air entry and assures quieter operation. These units in pressures up to 3000 and 5000 psi are especially suited to heavy duty pushing, pulling, lifting, lowering and maintaining high static loads on large clamping rams; for use in the iron, steel, metal working, plastic, automotive, rubber, printing, lumber and textile industries. For illustrated descriptive and application data, write for Bulletin 46601. THE OILGEAR COMPANY, Dept. A, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

If you write maker identify as **IEN - 8207**

BARBER COLMAN

Wheelco Chronotrol

Controls time-temp. heating programs automatically



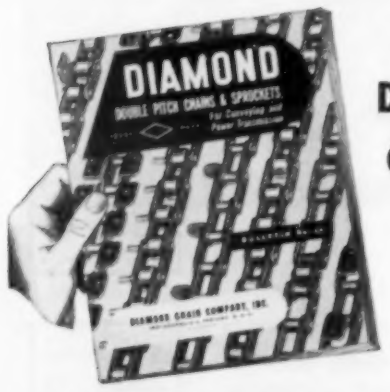
Saves time and manpower, improves product uniformity!

Whatever your program heating requirements for chemical, ceramics, or metal processing jobs . . . Wheelco Chronotrols *automatically* give you exactly the right heating and cooling temperatures and desired process time. Special program discs, or cams, regulate the program without supervision or manual adjustment. This simplified system saves maintenance, operating, and equipment costs. Wheelco's "no-contact" principle assures instantaneous response to slightest temperature changes . . . helps produce more uniform, accurate work. Wide selection of programs — from 4 hours to 7 days. Write for Bulletin CH-2.

WHEELCO INSTRUMENTS DIVISION
Barber-Colman Company, Dept. G, 1516 Rock Street, Rockford, Illinois

If you write maker identify as **IEN - 8202**

NEW BULLETIN 34



DIAMOND DOUBLE PITCH CHAINS AND SPROCKETS

Copy mailed on request

This new Bulletin 34 contains complete usable data on the great variety of Double Pitch Conveyor Chains, Sprockets and Attachments. Included also is the information on Diamond Double Pitch Transmission Chains that combine light weight with long-life dependability for moderate speed power drive applications. Just off the press—a copy is offered by the manufacturer—

DIAMOND CHAIN COMPANY, Inc.
Dept. 465, 402 Kentucky Ave., Indianapolis 7, Ind.

If you write maker identify as **IEN - 8205**

NOW.. WILLSON INTERCHANGEABLE RESPIRATORS IN BOTH SINGLE AND DOUBLE CARTRIDGE STYLES!

NOTE: The cartridges and filter shown for use in the Series 400 single-cartridge respirator are exactly the same as those used in the Series 800 double-cartridge respirator and can be used interchangeably in both. The other five cartridges, filters, and combinations are recommended for use only in the Series 800 respirator.

These Willson Respirators are the first truly interchangeable types in the field. Neither style requires additional parts or accessories to make use of the cartridges, filters, or combinations indicated to be used with them.

Write for bulletins describing these new Willson Interchangeable Respirators. Standardizing on them will give you the respiratory protection you want and simplify your inventory as well.

More than 300 safety products carry this famous trademark

WILLSON
Established 1870

WILLSON PRODUCTS, INC.
217 Washington Street
Reading, Pennsylvania

If you write maker identify as **IEN - 8208**

have you a CORROSION problem?

BOLTS • NUTS
SCREWS • RIVETS
COTTER PINS
WASHERS
SPECIALS

IN BRASS
SILICON BRONZE
NAVAL BRONZE
COPPER
NICKEL
ALUMINUM
MONEL
STAINLESS STEEL

Harper Everlasting Fastenings are corrosion-resistant—produced from non-ferrous metals and all stainless steels. For fastenings that improve the appearance of your equipment—add years to its life, call Harper—largest manufacturer in its field. Over 7,000 different items in stock to meet your requirements. Write for catalog.

HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog 25.

Name.....
Company.....
Address.....
City..... State.....

If you write maker identify as IEN - 8209

This steel insert, molded into plastic Spring-Locks, gives strength where it's needed—at the point of load or impact—eliminates doubts concerning the strength of plastic at these critical points.

The design flexibility of plastic Spring-Locks makes them ideal for a variety of uses... shelf supports, washer cover knobs, drawer pulls and many others. Spring-Locks cut material and assembly costs, too. No special tools, bolts, nuts or threadings required. Just a half-turn locks them securely.

Many standard shapes and sizes of Simmons Spring-Locks are available or any shape head can be designed. Send for full details.

SIMMONS FASTENER CORPORATION
1758 North Broadway, Albany 1, N. Y.

Any shape head can be molded in metal or plastic.

HERE'S HOW SPRING-LOCKS WORK

1. *Insert* 2. *Twist*
Steel insert carries load.

Simmons Spring-Lock

★ QUICK-LOCK ★ ROTO-LOCK

If you write maker identify as IEN - 8210

DE·STA·CO HELPS PUT SKYLIGHT IN THIS CAR

Photos courtesy Ford Motor Company, Detroit Macoid Company

Eleven Model 210 TU De·Sta·Co Toggle Clamps position and hold hot plastic sheets during the vacuum molding process used to produce transparent car roofs for Ford and Mercury automobiles. This fixture requires positive holding pressures during the 10 minute draw of Plexiglass sheet heated to 300° F. Two-second engagement and release of the De·Sta·Co Toggle Clamps speeds production, assures accuracy.

De·Sta·Co Toggle Clamps are available in over 45 models, with positive holding pressures up to 4000 pounds, for any work holding application.

Write for free catalog today.

DE·STA·CO DETROIT STAMPING CO.
342 MIDLAND AVE., DETROIT 3, MICH.

If you write maker identify as IEN - 8211

100-Pound Girl Moves 1000-Pound Load

Amazing Magcoa/Tobey feather-weight heavy-duty aluminum industrial trucks save money, manpower 3 ways:

1. **Truck weight slashed** through use of special high-strength, low-weight aluminum alloy extrusions that serve as the truck bed as well as frame. Every ounce of metal carries its share of the load; every truck is engineered not only for load requirements, *but for abuse as well.*

2. **Torsionally flexible construction** makes entire truck act like a spring; keeps all wheels on the ground at all times, regardless of bumps and holes. This smooths out up-and-down jolts; protects loads and floor; saves tires and casters; eliminates caster shimmy.

3. **Exclusive Tobey-design lifetime-lubricated casters** swivel when they are supposed to swivel. They cannot bind even when overloaded, don't shimmy, don't wear out, and don't wear you out! Tobey design eliminates the old-fashioned king pin; uses extra large Timken tapered bearings spaced far apart for complete freedom from binding.

All sizes, styles and capacities with removable sides and ends and other accessories . . . for manual pushing, or towing by powered equipment. Multiple-deck and A-frame trucks included in the line. New literature tells the whole story. Write for free copy.

MAGNESIUM COMPANY OF AMERICA
TOBEY ALUMINUM DIV. • EAST CHICAGO 14, IND.

If you write maker identify as IEN - 8212

TRUCK . . Two-wheel hand unit mounts hand hydraulic lift platform

Source: ALLIED MFG. & SALES CO.
3101 W. Grand Ave., Dept. IEN, Chicago 22, Ill.

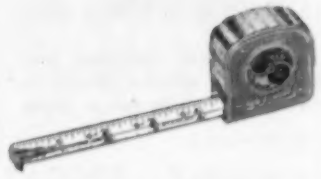
Holds load safely

Straddle feet, with swivel casters, have been added to provide stability in load-lift position for the company's Shop Caddy tote box handling truck, previously described IEN-5007-51. Two sizes provide lift to 36 and 54 inches. Load capacity is 500 pounds. A load is lifted by operating a pump handle at the rear of the assembly. The pump provides four selective power reductions for heavy to light loads. The truck applies in regular materials handling movements. It also serves at a machine to lift and hold work at a required height.

If you write maker identify as IEN - 8213

GAGE . . Flexible steel rule carries foot and inch scales to 10 feet

Source: STANLEY TOOLS
480 Myrtle St., Dept. IEN, New Britain, Conn.



Die cast case

Inches and feet, with fractional inch divisions, are marked off along one edge of this new No. 3610W flexible steel rule. Inches, in continuous reading, are marked off along the other edge, also with their fractions. The ¾-in. tape pulls out from or pushes back into a rectangular chromium-plated diecast housing that measures 2 in. from rear to front. The housing carries a dimension point on the front through which the tape issues so inside dimensions can be read by adding 2 in. to the tape reading.

The tape is finished in white enamel with black graduations and numbers. It is replaceable in the housing. List price is about $2.40 for the complete unit. A replacement tape lists at $1.10.

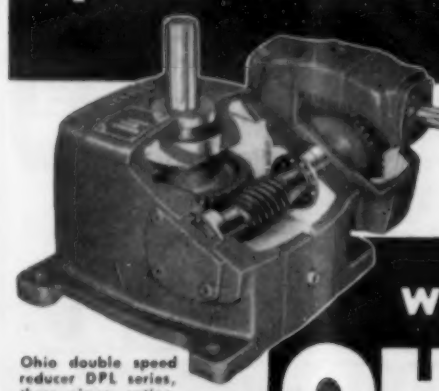
If you write maker identify as IEN - 8214

Bakelite Co., 30 East 42nd St., Dept. IEN, New York 17, N. Y., has started what may turn out to be an unselfish constructive move on the manufacturer's part who makes a material that finds its end use in another product. We have received from Bakelite a set of sheets listing the local retail outlets for Labelon Tape Co., 450 Atlantic Ave., Dept. IEN, Rochester 9, N. Y. This tape, previously advertised IEN-4579-54, is made of paper coated with Bakelite polyethylene. The tape can be written upon by applying pressure with any blunt instrument. The writing appears beneath a transparent outer coating and is protected by this coating against oil, dirt, water, most chemicals and smudging. Now Bakelite tells you the name of the nearest source for this interesting tape as a service to you and to one of its customers.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8215

LOOK INTO YOUR Speed Reducer Cost



Ohio double speed reducer DPL series, three sizes, ratios, 100-1 to 4,000-1. From ⅙ to 2½ horse power.

WITH OHIO

CHECK THESE ADVANTAGES
- ✔ Quality
- ✔ Design
- ✔ Dependability
- ✔ Purchase Price
- ✔ Delivery

Ohio Speed Reducers are famous for their performance. You will find them operating in every great industrial center in the world. Perhaps Ohio Gear can serve you as well. There is a Distributor conveniently located near you — or write to Ohio Gear direct.

ESTABLISHED 1915
THE OHIO GEAR COMPANY
1345 EAST 179th STREET • CLEVELAND 10, OHIO

OHIO GEARS

If you write maker identify as IEN - 8216

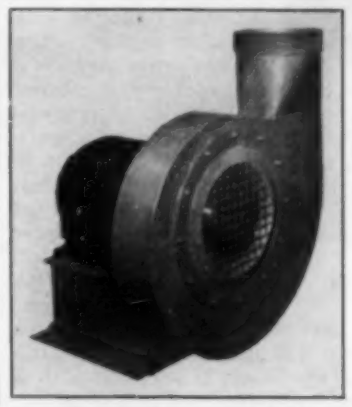
MAXIMUM EFFICIENCY

From

Industrial Oil or Gas Burners

is assured when air for combustion is supplied by—

ROBINSON TURBINE TYPE PRESSURE BLOWERS

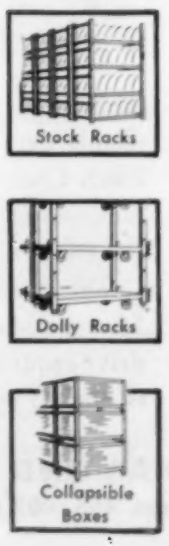


They are designed for accurate performance and built in a wide range of capacities from 4 ounce through 16 ounce pressure.

Ask for Bulletin No. 1100

ROBINSON VENTILATING COMPANY
Manufacturers of Fans and Ventilating Machinery for over fifty years
1945 HARMONY STREET
ZELIENOPLE PENNSYLVANIA

If you write maker identify as IEN - 8217



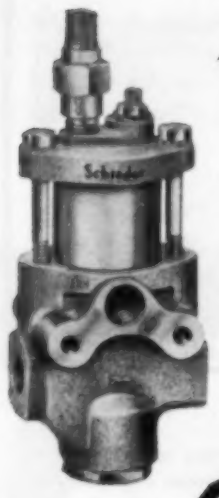
Strong, safe, stacking racks, portable and stationary, of welded square steel tubing reduce costs in production storage, order assembly, shipping — *in every industry.* May we show you how we can reduce your handling costs up to 50%?

WRITE FOR THIS NEW CATALOGUE

EQUIPMENT MFG. INC.
21564 HOOVER ROAD • DETROIT 5, MICH.

If you write maker identify as IEN - 8219

Schrader Pilot Valves for Remote Control of Air Systems



From any convenient spot, you can actuate air equipment by means of a Schrader Pilot Valve. Simply install in the main supply line at the point of operation, and add a small actuating valve at the point of control.

Pilot valves are available in two three- or four-way types, and ca be supplied with timers to deliver air from a fraction of a second to as many as desired.

The Schrader catalog gives complete information on pilot valves, as well as the full Schrader line of air operated products. Write for it today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-43, Brooklyn 38, N. Y.

If you write maker identify as IEN - 8220

Makes "Women's Work" of Handling DOUBLE-FACED PALLETS

Magic "Toggle-Booster" floats the truck into the pallet with minimum jolt or jar.

Easiest, quickest way to handle palletized loads—for short hauls, spotting loads or in congested areas. Just roll the truck into the pallet, lift the load and roll it away. Short stroke pump projects rear wheels through bottom face of pallet—lifts any load up to 4000 lbs. easily.

the SERVICE LEVER-LIFT*

*Write for Circular 411.

THE Olson CORPORATION
Elyria, Ohio
Now including the famous SERVICE CASTER & TRUCK CORP. line of heavy duty materials-handling products

If you write maker identify as IEN - 8221

GET THE FACTS ABOUT CARBON

Many design engineers have cracked some mighty tough problems through the use of carbon parts in machine design. Years of study have revealed properties inherent in carbon which, when applied to industrial machines, simplify design, reduce maintenance costs, and add life to vital equipment.

Write Today For

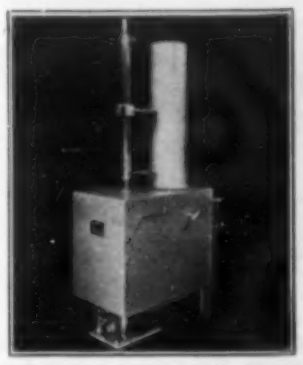
Morganite Design Data Reference—describes advantages, lists chemical and physical properties, gives hints on design. No obligation.

Morganite INCORPORATED
3316 48th Avenue • Long Island City 1, New York

If you write maker identify as IEN - 8222

PUMP . . Heated metal bellows unit for viscous fluids and melted solids

Source: RESEARCH APPLIANCE CO.
463 West View Road, Dept. IEN, Pittsburgh 9, Pa.



For metering duty

Bituminous tars, molten naphthalene, are representative fluids that can be handled by this new heated assembly of the Corson-Cerveny Micro-Bellows pump, previously described IEN-12454-49. The new assembly includes a 500-watt electric ring heating element, a motor with a 6-in. fan to agitate air in the heated box, a needle valve to check rates, a steam heated jacketed charger, a jacketed burette to check rates and a woven wire filter tube set in the product line.

The pump operates the same as the previous unheated design except that the checks and bellows are enclosed in the heated chamber with the screen type filter and the rate checking needle valve. This valve can be closed between the charger and the burette and a reading taken directly from the burette.

Three sizes are minimum at 15 to 1,000 ml. per hr. and maximum at 50 to 6,000 ml. per hour. Overall dimensions are 16 by 17¼ by 28 inches. Weight is 36 pounds.

In operation, the stainless steel bellows is alternately lengthened and shortened by an adjustable cam drive to draw in fluid and expel it through the stainless steel check valve fitting. Drive is by a motor operating at 30 rpm. on 110-volt 60-cycle ac.

If you write maker identify as IEN - 8223

GRINDING . . Air operated table rotates work for surface grinding

Source: VULCAN TOOL CO.
730 Lorain Ave., Dept. IEN, Dayton 10, Ohio

Connects to shop air line

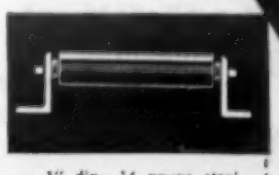
Speed ranges between 40 and 100 rpm. for this new air operated rotary table. It is available in 6 and 10-in. diameters to mount on the table of a surface grinding machine. Only the machine cross-feed is employed, when the table is in place, to handle work such as flanged studs or bushings, bearing spacers, forming rolls, pin gages, punches and dies. The table can be used on a sine plate or angle fixture with a standard surface grinder wheel to eliminate the need to dress external wheels for side grinding. It can be secured on the machine table by means of a magnetic chuck or a manually tightened fixture.

The company also is prepared to supply the table with a lapping plate to convert the unit into a portable or bench type lapping machine.

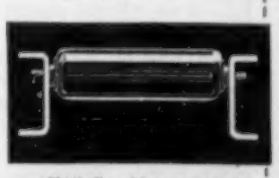
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8224

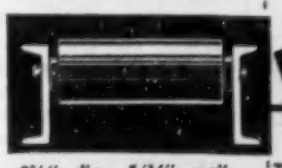
HOW DO YOU SELECT A ROLLER CONVEYOR?



1" dia., 14 gauge steel roller, ¼" hex axle, angle frame.



2¼" dia., 16 gauge steel roller, ⅜" hex axle, formed channel frame.

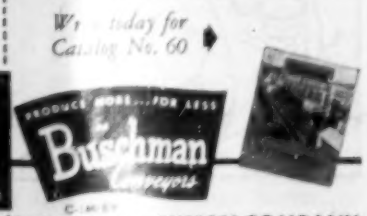


3½" dia., 5/16" wall steel roller, 1-1/16" hex axle, structural channel frame.

BUSCHMAN features a *complete* range of roller diameters, from 1" to 3½" . . . wide selection of bearings to fit individual operating conditions . . . choice of frame types and sizes . . . widths and centers of rollers to specifications. To be sure the conveyor will do *your* job best —

LET A BUSCHMAN ENGINEER RECOMMEND!
(No obligation, of course)

Write today for Catalog No. 60



THE E. W. BUSCHMAN COMPANY
4447 Clifton Avenue • Cincinnati 32, Ohio
REPRESENTATIVES IN PRINCIPAL CITIES

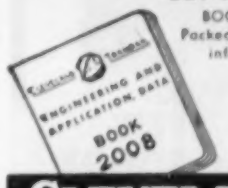
If you write maker identify as IEN - 8225

If you write maker identify as IEN - 8226

Inexpensive Hand-Propelled Crane with Chain Hoist

If hard, back-breaking work is required on the part of several men to move a machine in your plant, you should seriously consider either hand-propelled or electric Cleveland Tramrail cranes. Work that requires hours can often be done in minutes with an overhead crane. Many cranes pay for themselves in only a few months time.

GET THIS BOOK!
BOOK No. 2008
Packed with valuable information...



CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4236 East 285th Street Wickliffe, Ohio

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 8227

"John Crane" *Plastic Lead Seal is the most economical all-purpose sealing compound for pipe joints, studs and gaskets—*because you use less to get a better seal.* PLS seals for the life of the connection, yet never hardens, allowing joints to be easily broken after years of service.

PLS prevents galling . . . is insoluble in water, gas, steam, many chemicals and all petroleum products. Use it for all services . . . low or high pressure applications up to 6000 psi. . . . temperatures to 500°F. Carries the Underwriters' seal of approval.

Prove to yourself that it takes less PLS to give a perfect seal. Send for a generous free sample. Crane Packing Company, 1815 Cuyler Avenue, Chicago 13, Illinois.

In Canada: Crane Packing Co., Ltd., 617 Parkdale Ave., N., Hamilton, Ont.

CRANE PACKING COMPANY

If you write maker identify as IEN - 8228

CUT COSTS WITH MULTIPLE BENDING

Whether you're bending pipe, tubes, reinforcing bars or structural shapes, you can greatly increase your bending production by multiple die bending.

Shown here is our Model A-5 BENDING MACHINE, tooled for bending 3 different radii without changing the set-up. In order to make multiple bending cost no more per die than single bending, individual dies are merely stacked on the die spindle and a shoe of the proper width permits the same degree to be bent without changing the automatic reset switch. The MODEL A-5 will bend pipe up to and including 2" standard weight pipe.

Redesigned and greatly improved, the Model A-5 still sells for only $1975. F.O.B. factory, U. S. Funds.

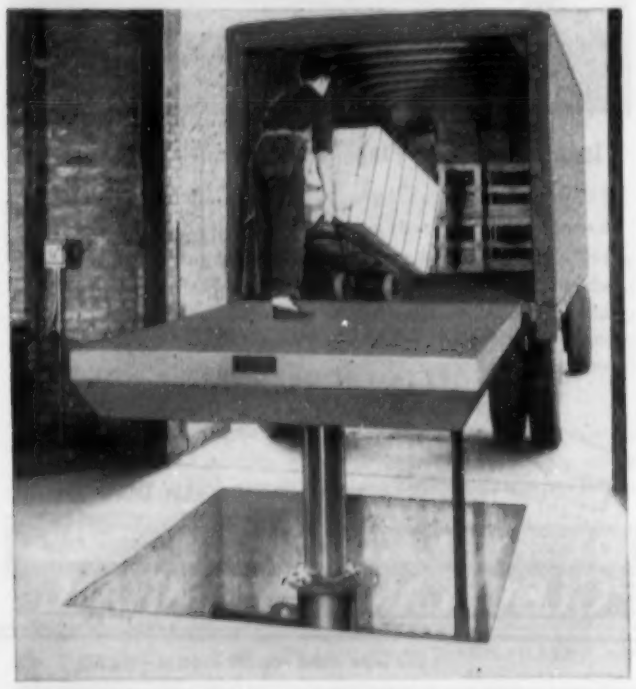
Smaller and larger machines available.

Write for detailed and descriptive folder, Dept. 7.

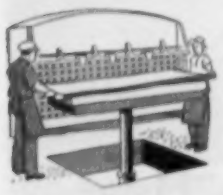
PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St. Philadelphia 40, Pa.

If you write maker identify as IEN - 8229

Rotary LEVELATOR® Lifts HANDLE HEAVY LOADS FASTER AND CHEAPER



Adaptable To Many Uses—Use economical Oil-draulic power to lift loads from plant floor to trucks, machines or different building levels. Rotary Levelator Lifts speed plant traffic, cut labor costs. Save plant space too . . . often eliminating need for loading docks.



Machine Feeding—Used for machine feeding, Levelator Lifts are time-savers, cost-savers. They lift loads faster and cheaper than men or makeshift methods and keep materials at the right height for continuous feeding.

Levelator Lifts are built for specified loads up to 80,000 lbs., travel up to 6 ft., speed as desired. When lowered, platform recesses into floor and can be trucked over. Powered by economical compressed air or hydraulic power unit.

MAIL COUPON FOR CATALOG
ROTARY LIFT CO.,
1151 Kentucky, Memphis 2, Tenn.
Send complete information on
Levelator Lifts to:
Name.....
Address.....
.....

Rotary LEVELATOR® LIFTS

If you write maker identify as IEN - 8231

ROOFS . . Woven glass cloth and bituminous coating for resurfacing

Source: TWINSBURG-MILLER CORPORATION
Box 207, Dept. IEN, Twinsburg, Ohio

Ask for "Application Specifications"

New application of the company's Glasfab water proofing membrane, initially developed some time ago, has been worked out by the company in connection with standard types of cold roof repair coatings for resurfacing operations. The woven material, measuring 45 in. in width by 300 ft. in length, is applied with a coating over the dry fabric and a finish coating to complete the surface repair job. The material can be employed on any type of building roof, following clean up and repair operations. The fabric unrolls evenly, lies flat on the surface. It binds the coating material to produce a tough reinforced surface with excellent weathering characteristics.

If you write maker identify as IEN - 8232

PLASTIC . . Semi-rigid fluorocarbon, bars, cylinders, extruded rods, tube

Source: UNITED STATES GASKET CO.
Box 468, Dept. IEN, Camden 1, N. J.

Bulletin FL-300 upon request

Fluoroplast is a reprocessed solid semi-rigid fluorocarbon plastic from which the company molds bars and cylinders and extrudes rods and tube. The material is colored green for identification. It is inert to acids, alkalis, solvents, except molten alkali metals, fluorine at elevated temperatures and chlorine trifluoride. It has excellent dielectric properties and remains serviceable between minus 110 and plus 500 deg. F.

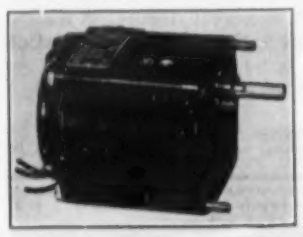
Molded bars are minimum at 3 in. in length, maximum at 12 in., in sizes to 2¾ in. in diameter, or 3 in. at the maximum 6-in. diameter. Cylinders are available in inside diameters from ⅛ to 19 in. with outside diameters from 2 to 20 in. both in increments of ⅛ in. in any combination providing a wall thickness of not less than ½ in. and not more than 2 inches.

Extruded rod ranges from ¼ to 2 in. in diameter in random lengths at 6 ft. for the smallest size, 2 ft. for the largest. Tubing ranges from ¼ to 1½ in. in inside diameter, ⅜ to 2 in. in outside diameter. The company is prepared to supply the finished materials or to fabricate them to specification.

If you write maker identify as IEN - 8233

MOTOR . . Geared head reversible for instrument drive, 0.7 to 280 rpm.

Source: BODINE ELECTRIC CO.
2254 W. Ohio St., Dept. IEN, Chicago 12, Ill.



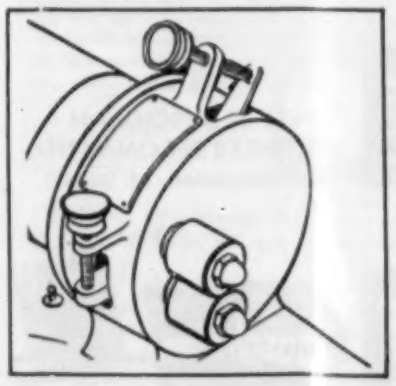
Operates quietly

We call your attention to the fact that we showed the company's new Type K-2RM geared head motor up side down in IEN-6360-54. It is shown correctly in this "repeat" description. The motor is available with either synchronous or non-synchronous winding and with a head enclosing helical gears to provide specified speed between 0.7 and 280 rpm. Corresponding torque ratings are 120 to 2.7 inch ounces. The motor provides starting torque at 150 per cent, or better, of full load torque at room temperature. Dimensions are 2⅝ by 2⅝ by about 2 9/16 to 3⅝ inches.

If you write maker identify as IEN - 8234

STRIPPING . . Motor driven machine removes insulation from electric wire

Source: WYBAR ELECTRONICS INC.
Dept. IEN, Syracuse 1, N. Y.



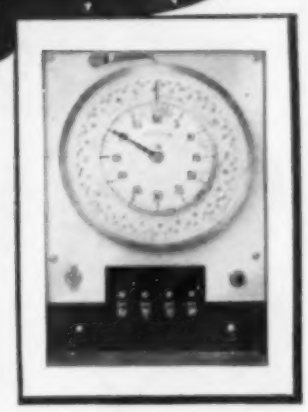
Instant action

Two wheels, mounted with fiber glass, rotate on parallel spindles in this new machine. They are adjustable to present the correct gap to strip film type insulation from electric wire ranging between No. 50 and No. 23 AWG. The machine mounts on a bench at an assembly job or a winding machine. Replacement wheels are available.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8235

Always UP to the job ZENITH



Magnetic Solenoid Contactors

You can always count on dependable Zenith Magnetic Solenoid Contactors for positive performance. Get longest service in continuous or flashing duty with a minimum of attention by selecting these precision-built contactors for your equipment.

Check these features: no overheating on 24 hour operation—solid contact pressure—instant opening switch. Operates up to 60 times per minute at 80% of rating, 30-300 amp. AC, 1, 2, 3 poles. 30-200 amp. DC, 1, 2 poles.

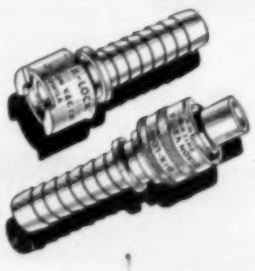
Zenith makes a complete line of Timers, Switches, Starters . . . special automatic controls made to order. Write today for free catalog and money-saving quantity prices.

ZENITH ELECTRIC CO.
146 West Walton Street Chicago 10, Illinois

If you write maker identify as IEN - 8236

"DIX-LOCK"

Quick-Acting, Streamlined AIR HOSE COUPLING



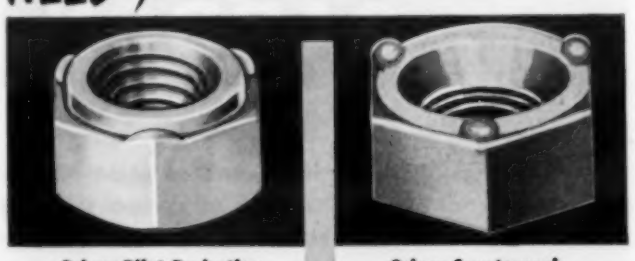
A modern, efficient coupling for all factory and field air lines up to ¾". Made of rustproof steel or bronze. Light weight, yet strong and durable. Snap-Lock action . . . quarter-turn against spring tension; reverse quarter turn to unlock. Hose ends; male and female I. P. T. ends. Completely interchangeable.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.
PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "GJ-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

If you write maker identify as IEN - 8237

WHEN YOU NEED a nut for blind assemblies or extra threaded depth, use one of these 2 WELD NUTS



Gripco Pilot-Projection Weld Nut
Circular pilot designed for quick, easy positioning of nut over bolt hole for instant resistant welding. No jigs, no fumbling, no waste of time. Furnished with or without famous Gripco locking feature.

Gripco Countersunk Weld Nut
Eliminate time-wasting retapping of nuts after welding. Exclusive countersunk nut bottom does away with fouling of nut threads by weld spatter. Available with or without Gripco locking feature.

Gripco weld nuts are proud members of the Gripco Lock Nut family that has for 50 years provided positive holding action for quicker fastening application at less cost. Also included in the Gripco line: Gripco Lock Nuts, New Gripco "Clinch" Nuts, Gripco Hi-Nuts in all standard sizes. For any fastening problem, look to Gripco first. Write for samples and full details.

GRIP NUT COMPANY
"after 50 years still holding strong"
310-S S. MICHIGAN AVE., CHICAGO 4, ILL.

If you write maker identify as IEN - 8238

Check into this

How many men does it take to handle a heavily loaded barrel or drum?

ANSWER: Only ONE if you use a—

SABIN One Man BARREL TRUCK

Think of the labor you'll save.

It's easy for a man, without helpers, to pick up and move loads up to 800 pounds. All he does is run truck up to container, hook on at top, and pull back on handle to pick up load. Exclusive Third Wheel Feature assures better balance and safer movement of loads.

WRITE FOR BULLETIN NO. 48-A

The Sabin Machine Co.
6540 Carnegie Ave.
CLEVELAND 3, OHIO

If you write maker identify as IEN - 8239

PROTECT COSTLY PIPING WITH

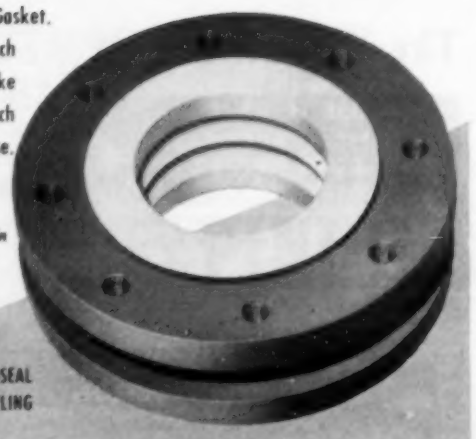
CHEMISEAL

made of TEFLON

EXPANSION JOINTS and FLEXIBLE COUPLINGS

Chemically Impervious TEFLON Bellows absorb shock vibration, expansion and contraction—correct misalignment.

Integral TEFLON Gasket. Flanges to match like or unlike companions at each point of use.



CHEMISEAL FLEXIBLE COUPLING

• Ask for Bulletin No. FC-952.

ASK YOUR INDUSTRIAL DISTRIBUTOR or write —

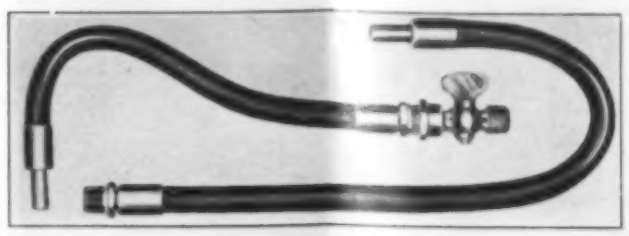
UNITED STATES GASKET COMPANY

CAMDEN 1 • NEW JERSEY
FABRICATORS OF duPont TEFLON, Kellogg KEL-F AND OTHER PLASTICS
Representatives in Principal Cities Throughout the World

If you write maker identify as IEN - 8241

HOSE . . Plastic for coolant holds contour to which user shapes it

Source: COUSE & BOLTON CO.
42 Lafayette St., Dept. IEN, Newark 2, N. J.



Patent applied for

Flex-Set trade names a new flexible plastic coolant hose assembly. It is supplied by the company in specified lengths and with required fittings for application on a machine. The smooth bore tube employs a stiffening member that holds the hose to the contour put into it by the user without interfering with coolant flow. Vibration or coolant pressure will not change the contour.

The hose is carried in stock in standard lengths ranging from 6 to 36 in. and in standard sizes from ⅛ to ¾ inches. It is available with fittings for a given installation.

If you write maker identify as IEN - 8242

TRANSFORMER . . To boost or buck input voltage for an air conditioner

Source: ACME ELECTRIC CORP.
26 Water St., Dept. IEN, Cuba, N. Y.

Technical data in Bulletin BB-199

Series 11,000 designates a new line of transformers to provide a means for supply of normal voltage, single phase, from available "under" and "over" voltage circuits. Thus, where only lighting circuit voltage is available for installation of air conditioning equipment, the new unit provides boosting action that will develop full starting torque of a 220-volt single-phase motor to prevent it from operating constantly on its starting windings with the possibility of overheating and burn-out.

The transformer is essentially a four-winding unit in which the separate windings are interconnected to provide the same voltage tapping characteristics as an auto transformer. In effect, the secondary winding voltage is added to the input voltage to boost the output by 5 or 10 per cent. At the same time the load capacity of the transformer is compounded in relation to its multiplied output voltage. Thus a ¼-kva. transformer with 120 x 240 input and 12 x 24-volt output, by interconnection, becomes a transformer suitable for use on a 208-volt circuit to deliver 228.8 volts with a capacity of 2.38 kva.

If you write maker identify as IEN - 8243

SEPARATING . . Magnetic grate stops tramp iron at a hopper opening

Source: HOMER MFG. COMPANY
434 N. Main St., Dept. IEN, Lima, Ohio

Protects equipment

A wire grid, with horizontal rods between Alnico permanent magnet bars, deflects free flowing material into streams that wipe the bars in this new magnetic grate separator. Large and small pieces of tramp iron adhere to the bars from which they can be cleaned off at intervals. At the same time the grate mechanically stops debris such as paper, rags, sticks.

It can be hung in any opening through which free flowing materials pass. It is available in sizes measuring 2 by 4 in. to 6 or 8-ft. square. Special sizes and shapes are to order.

If you write maker identify as IEN - 8244

LIGHTING . . Emergency unit switches to battery on circuit failure

Source: CARPENTER MFG. COMPANY
219 Master Light Bldg., Dept. IEN, Boston 45, Mass.

UL approved

Model 116 is a new emergency unit employing two flood lights, a glass-jar wet storage battery, relay operated switch and charging equipment, all in a portable housing. A visible disc float hydrometer indicates battery condition. The unit plugs into a normal electric circuit where it rides with its battery circuit held open and its charger circuit closed.

The battery circuit is closed by relay action if the normal current fails. The battery circuit is opened when normal service is restored. The battery will deliver 91 per cent of rated capacity after 30 min. of steady operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 8245

Commander TAPPER

★ Wider Range...1 Tapper Handles #0 to ¾" Taps

★ Automatic Tap Protection

★ Furnished to fit any Drill Press

Commander—"The Tapper That Thinks For Its Operator," has the adjustable full range torque control that instantly stops any tap when it becomes dull, loaded, strikes a hard spot or bottoms in blind hole tapping. Assures maximum tap protection, higher production, even with inexperienced operators.

Your nearby Commander Distributor can give you a demonstration in your own plant. Write for his name and a copy of the NEW Commander Full Line Catalog.

COMMANDER MFG. CO.
4219 W. Kinzie St. Chicago 24, Ill.

Product of Commander... Builder of Production Tools

If you write maker identify as IEN - 8246

Hardware openings on Ford cars are quickly covered with a sealer, based on BAKELITE Vinyl Resins, and supplied by **Dennis Chemical Co.**, 2701 Papin St., St. Louis 3, Mo.

Sprayed film seals openings up to three inches across

The inside panels on Ford car doors are one of many applications for a new, economical sealing method. Regular industrial spray equipment is used with a sealer coating based on BAKELITE Vinyl Resins. Openings in these panels for control mechanisms (door latches, window wind-ups in cars), bolts, and screws permit entrance of dust and moisture. This can lead to deterioration of the interior surfaces and structure, and possible staining of interior cloth covering. The sprayed-on sealer forms a flexible and vibration-resistant, tightly-adhering film over such openings. Sound-deadening is an added advantage.

This sealing method is one more way by which manufacturers and industry can produce better products. Take advantage of the excellent durability and resistance of BAKELITE Vinyl Resins to acids, alkalies and many other agents.

For a free copy of our booklet, "BAKELITE RESIN COATINGS FOR THE GENERAL INDUSTRY" write Dept. XH-3.

BAKELITE TRADE-MARK
VINYL RESINS
TRADE MARK
BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
30 E. 42nd Street, New York 17, N.Y.

If you write maker identify as IEN - 8248

Control Costs!

Print the Weight with New TOLEDOS

New Toledo Printweigh Scales meet your needs today for *closer cost control!* Stop human errors in reading, remembering, recording . . . provide accurately printed weights with split-second speed . . . *accurately* recorded!

Printweighs are available for dial type scales in the great new line of Industrial Toledos! *44 new features* include . . . new clean-line design . . . double-pendulum mechanism in one-piece sector . . . lifetime fulcrum. Send for new condensed catalog No. 2001. Toledo Scale Co., Toledo 1, Ohio.

TOLEDO.
Headquarters for Scales

If you write maker identify as IEN - 8249

High Efficiency Deaerator at LOW COST

Cochrane UNI-PAC DEAERATOR*

for small and medium size plants

- Guaranteed to deliver zero oxygen water.
- Factory assembled.
- Completely self-contained.
- Easy to install.
- Minimum piping required.
- Wide range of heater sections, storage tanks and accessories to meet any plant requirement.

Now, you can have *zero oxygen* feedwater for your boilers at a cost within reach of the smallest plant!

The Cochrane UNI-PAC DEAERATOR delivers water heated to the saturation temperature of the steam used with a guaranteed zero oxygen content as determined by accepted tests (less than 7 parts per billion).

The UNI-PAC DEAERATOR is designed for either right or left hand installation, and in a wide range of outlet and storage capacities.

For complete details of the UNI-PAC DEAERATOR, *use the coupon below.*

*Trademark

Cochrane CORPORATION
3152 N. 17TH STREET, PHILADELPHIA 32, PENNSYLVANIA

C100.5

COCHRANE CORPORATION
3152 N. 17th St., Philadelphia 32, Pa.

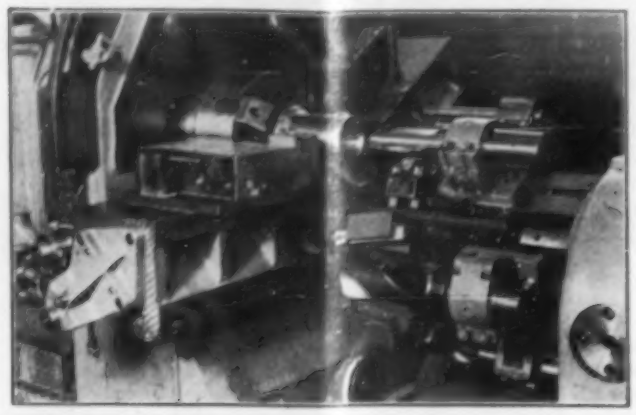
Please send me a copy of Publication 4643 on the Cochrane UNI-PAC DEAERATOR.

NAME_____ TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ STATE_____

If you write maker identify as IEN - 8251

LATHE . . Chucking machine operates in automatic machining cycle

Source: NATIONAL ACME CO.
170 E. 131st St., Dept. IEN, Cleveland 8, Ohio



Ask for general Bulletin MC-53

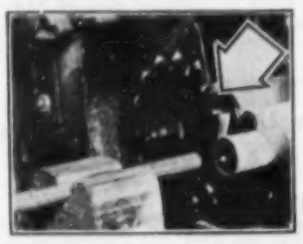
Floor-to-floor time can be maintained as much as five times faster, than on the company's previous design of its universal single spindle chucking automatic, in this new 12-in. Universal machine. No time is lost from the start of the machining cycle, after loading, until the finished piece is presented for unloading. Idle time movements, such as advancing the tool slides to cutting position, returning them after completion of a cut to turret indexing position and indexing the turret slides, are all accelerated.

Each of the five turret tool slides and the two cross slides is independently cammed. The tool slide cams are located in accessible position. Timing control switches are grouped for operation from cam dogs mounted on a single drum at the rear of the machine. The new arrangement, plus automatic selection of a maximum of six spindle speeds and three feeds during the machine cycle, with each set of change gears, makes practical the best use of carbide tools or combinations of carbide and high speed tooling.

The tooling zone is free from interference by shafts or accessories and the operator has free access to the tools at elbow height. Adaptability for additional tooling, including specialized attachments for self-opening threading dies and collapsing taps, permits including additional operations in a single automatic set-up to avoid work re-handling. The machine features a husky frame structure, heavy tool slides free from over-hang, fast and shockless turret indexing. Safety devices protect the machine and the operator.

If you write maker identify as IEN - 8252

A thread cutter, 4 in. in diameter, with 16 Carboloy teeth, is employed on a lathe with a Dumore driving attachment to thread mill laminated wood that has been built up with a particularly abrasive phenolic resin. The same set-up is used to thread mill fiber bars. The resin presents no problem to the carbide cutter which replaced a cutter made of high speed steel. Life in service for the carbide is multiplied about 35 times over the steel. Carboloy Dept., 11167 E. 8-Mile Road, Dept. IEN, Detroit 32, Mich., can supply details.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8253

pick up production with ELECTROLIFT

This is the worm drive hoist that will give your production a big lift. ElectroLift moves materials through your plant with greater speed, safety and efficiency than any crew.

A wide variety of one-man models is available in sizes up to 6 tons. All are designed to operate with low headroom and have optional pushbutton or rope control.

For full details on the features of ElectroLift consult your ElectroLift representative listed in telephone directory or write:

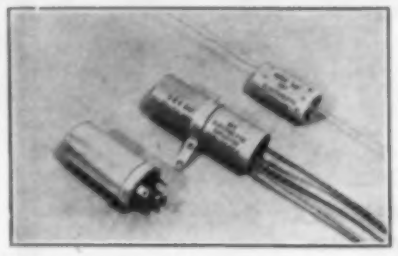
ELECTROLIFT WORM DRIVE HOISTS

ElectroLift, Inc.
204 Sargeant Avenue
Clifton, N. J.

If you write maker identify as IEN - 8254

CAPACITOR . . Electrolytic design in single to quadruple combinations

Source: UNITED ELECTRONIC MFG. CO.
542 39th St., Dept. IEN, Union City, N. J.



Data on request

Three lines of electrolytic capacitors have been developed by the company under the trade name Unecap. One is a wax impregnated cardboard tube with a mounting strap and insulated flexible color coded leads that are stripped for soldering. This unit is good for operation to 80 deg. C. and is made in single, dual, triple and quadruple combinations. A second design, known as Super-Cap, is hermetically sealed in an aluminum can with an insulating sleeve marked for identification. The third is a Twist Prong Can, hermetically sealed design in an aluminum grounded can. It is available in 1 and 1⅝ in. diameters in single, dual, triple and quadruple assembly.

If you write maker identify as IEN - 8255

WOOD WORKING . . Power saw "floats" reciprocating blade through work

Source: WRIGHT POWER SAW & TOOL CORP.
292 Longbrook Ave., Dept. IEN, Stratford, Conn.

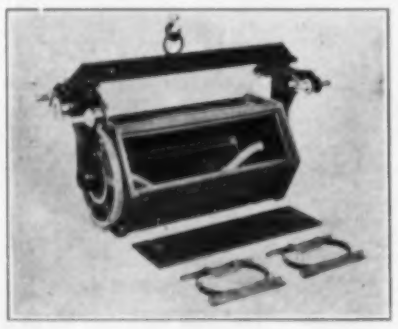
Please note our error

We should have said in our editorial description IEN-6153-54 for the company's reciprocating-blade portable power saw that the blade can be removed and replaced in 30 seconds with no tools required. Sharpening can be done by hand in a few minutes.

If you write maker identify as IEN - 8256

PLATING . . Hard rubber barrel withstands attack by heat and abrasion

Source: UDYLITE CORPORATION
1651 E. Grand Blvd., Dept. IEN, Detroit 11, Mich.



Patents applied for

Tempron trade names the hard rubber employed in the interlocking panel and rib assembly of this new plating barrel. The barrel can be supplied plain with its operating mechanism or with a teflon liner or membrane with perforations smaller than can be obtained by usual drilling methods. This liner can be installed with minor modifications to the barrel. Barrel dimensions are to specification.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8257

2 *Announcing . . .* BANDSAWS *in* 1

The Versatile NEW WELLS 49-A

USE IT AS A VERTICAL BANDSAW

In this position the New Wells 49-A is a Utility Upright Bandsaw for vertical cutting of angles, slots, notches, bevels and contour work. Ample power, efficient (3 speed) V-Belt Drive and sturdy construction assure smooth, even cutting.

USE IT FOR HORIZONTAL CUT-OFF

In this position your dual purpose New Wells 49-A becomes an Efficient, Economical Horizontal Cut-Off Saw that will handle "man sized" cut-off jobs in large or small shops. It's an ideal tool for "job-site" work and handy for maintenance or utility work.

Write today for complete information.

Products by Wells are Practical

Wells

METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

If you write maker identify as **IEN - 8258**

HEATING . . Electric oven for range from 200 to 900 deg. F.

Source: ASSOCIATED METAL FABRICATORS
18-20 Sebago St., Dept. IEN, Clifton, N. J.

Automatic control

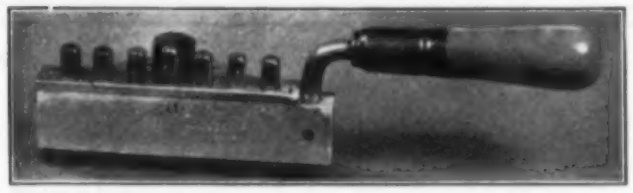
The heating chamber in this new Model-100 Type-1 oven measures 15 by 36 by 15 inches. It is closed at the front by a counter-weighted sliding door. Six inches of magnesia insulation minimize thermal loss. The housing is made of 1/16-in. steel.

The oven is available in floor and bench mounting designs. It includes an automatic pressure relief vent, a pilot light indicator. The electric elements and the controller operate on 220-volt three-phase or 440-volt three-phase input. The oven is suited for any application requiring accurate temperature control from 200 to 900 degrees F. It lists at $925.

If you write maker identify as **IEN - 8259**

MARKING . . Steel stamp holder, with leaf type springs in aluminum body

Source: PITTSBURGH STENCIL & TOOL CO.
Scotland & Reesdale Sts., Dept. IEN, Pittsburgh 12, Pa.



Available to order

Featherweight designates a new aluminum body holder for steel stamps in which leaf type springs retain the stamps in square broached holes. The body is fitted with a wood grip steel handle and with a steel cover plate that provides quick access to the springs and protects the body from hammer blows. The holder is available to order to present one or more rows of stamps. They are struck individually with a hammer to make a desired marking.

If you write maker identify as **IEN - 8260**

An even transparent protective film of Rust Veto can be sprayed on finished surfaces of tools, dies, gages, precision parts, hardware, by pressing a button on the new pressurized container in which the liquid is now available. The film need not be removed when the parts are put into service.

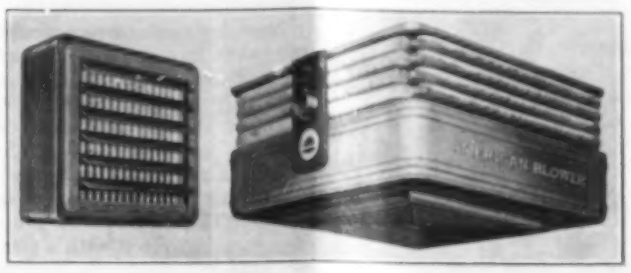
E. F. Houghton & Co., 303 W. Lehigh Ave., Dept. IEN, Philadelphia 33, Pa., offers cases of twelve 12-oz. cans at $15.24.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8262**

HEATING . . Space units for steam or hot water, horizontal and vertical

Source: AMERICAN BLOWER CORP.
8109 Tireman Ave., Dept. IEN, Detroit 32, Mich.



Detailed description in Bulletin 7517

The company announces a redesigned line of unit heaters, for steam or hot water operation, in horizontal and vertical designs and in a range of capacities. Both operate quietly and are tested and rated in accordance with the standard test codes adopted jointly by the Industrial Unit Heater Association and the American Society of Heating and Ventilating Engineers.

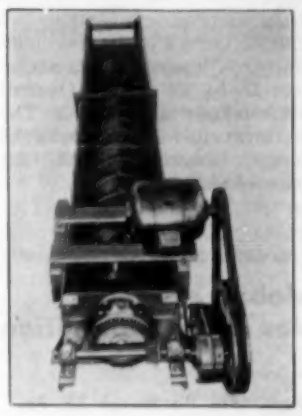
The horizontal unit, to the left in the illustration, measures 20⅝ to 41 in. in width and height by about 13 to 25½ in. from front to back overall. Supply and return connections measure 1¼ to 2½ in. for steam and ¾ to 1½ in. for water. Weight ranges from about 65 to 242 pounds.

The vertical heater, illustrated to the right, measures 23¼ to 43½ in. in width and depth from front to back by 17¾ to 29¾ in. in overall height. Its supply connection ranges from 1½ to 2½ in. and its return connection from 1 to 1½ inches. Weight is 68 to 344 pounds.

If you write maker identify as **IEN - 8263**

CLEANING . . Screw type washer for use on sand and similar materials

Source: McLANAHAN & STONE CORP.
Dept. IEN, Hollidaysburg, Pa.



Bulletin CM-1

Illustrated is new single screw design, similar to the double screw assembly of the company's sand washing equipment, previously described IEN-13157-53. It is known as Model CM-1. It washes or dewaters gravel, crushed stone and similar materials to 2 in. in maximum size. Flight diameter can be specified at 20 to 36 inches. Capacity ranges from 60 to 185 ton per hour in the single screw assembly. The shafts ride in grease lubricated anti-friction bearings. Hardened steel paddles, at the feed end, assist in breaking down lumps of foreign material. The flights are made of chilled abrasion resistant iron.

Sand and water enter through a feed box at the lower end. The screw, or flight, forwards the sand to the upper discharge end. The water and entrained foreign matter, with specific gravity less than the sand, return for discharge at the bottom of the new assembly.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8265**

UNIVERSAL DRILL BUSHINGS INSURE PERFECT ALIGNMENT AND LONG LIFE OF PRODUCTION TOOLS

181-A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

If you write maker identify as **IEN - 8266**

For LONGER Wear Get Industrial Tires Job-Fitted 3 Ways

—by your Goodyear Dealer—distributor of America's most complete line of industrials

For greater cushioning and easier rolling, get Goodyear's high-traction Xtra Cushion Solid Tire in the All-Service Tread (shown above).

THE surest way to keep tire costs and "down time" in line is to get the right tire for the right job. And the surest place to go for the right tire is your Goodyear Dealer, because he recommends Goodyear Industrial tires that are job-fitted three cost-saving ways.

1. **Job-Fitted By Size**—the *right* size for your equipment. Goodyear has over 100 different solid tire types and sizes plus a full line of pneumatic and semi-pneumatic tires—America's most complete line of Industrials.

2. **Job-Fitted By Tread**—the *right* tread for your floor surfaces. Smooth and Grooved for easy rolling. All-Service or the famous All-Weather, wherever traction is needed.

3. **Job-Fitted By Compound** — the *right* compound for maximum life. Goodyear offers you a choice of either UNiversal chip-resistant or Neoprene oil- and acid-resistant compound *at no extra cost.*

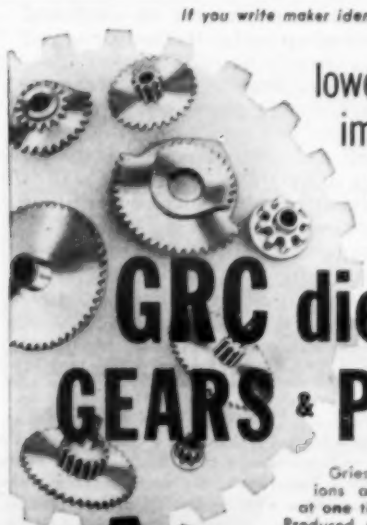
Why not call on your Goodyear Dealer's services today? Or write Goodyear, Industrial Tire Sales, Akron 16, Ohio.

USE THE RIGHT TIRE FOR THE RIGHT JOB—USE

GOODYEAR
INDUSTRIAL TIRES

Xtra Cushion, All-Weather, All-Service—
T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

If you write maker identify as **IEN - 8261**



lower costs... improve design... save time... with

GRC die cast GEARS & PINIONS

Gries Zinc Alloy Gears and Pinions are die cast in one piece, at one time—and one low unit cost! Produced precisely to your specifications, permitting a flexibility of design heretofore impractical. One-piece assemblies can be cast with shafts or center holes, or in combination with cams, hubs, spacers, flanges and other mechanical elements. Maximum size: 1-5/16" outside diameter x 1/16" face width; wider faces for smaller diameters.

COMBINATIONS die cast in ONE piece!

MANY COMBINATIONS AVAILABLE FOR LESS PRECISE APPLICATIONS FROM STOCK DIES AT NO TOOLING CHARGE.

Write Today For Full Information And Samples

Send specifications for prompt quotation.

World's Foremost Producer of Small Die Castings.

GRIES REPRODUCER CORP.

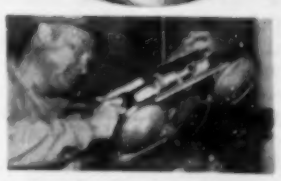
139 Beechwood Ave., New Rochelle, N.Y. Tel.: New Rochelle 3-8600

If you write maker identify as **IEN - 8264**

NEW PORTABLE BAND SAW

Cuts metal 15 times faster than a hack saw!

Porter-Cable **PORTA-BAND** Model 524 **$215**



Portable, compact, light—take Porta-Band anywhere, use in any position. Powered for heavy duty. Eliminates fatigue—cuts costs.

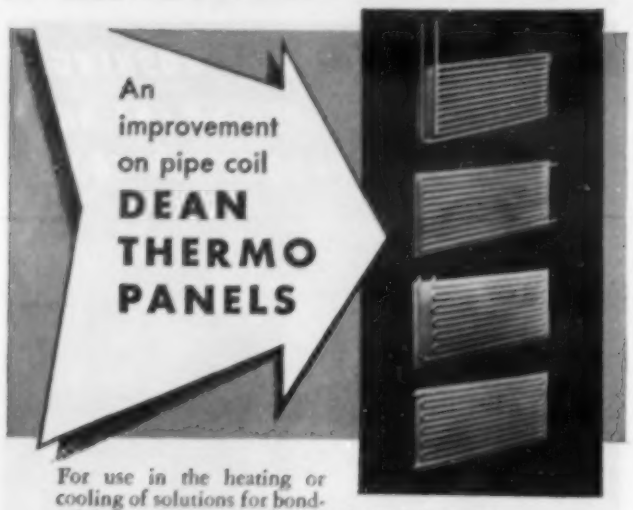
Cuts thru 1½" cold roll steel in 41 secs.! That's 15 times faster than a hand hack saw . . . 2½ times faster than larger power hack saws! Handles all materials up to 3¼" dia. round, 2¼" x 4¼" rectangular.

WRITE TODAY for full information

PORTER-CABLE Machine Co.
2207 N. Salina St.
Syracuse 8, N.Y.

Porter-Cable *Quality Electric Tools*

If you write maker identify as IEN - 8268



For use in the heating or cooling of solutions for bonderizing, metal washing, degreasing, plating, etc. Low in first cost . . . light weight . . . space-saving . . . do away with expensive pipe coiling . . . provide efficient heat transfer.

Available in special shapes such as "U"s, "L"s, and cylinders . . . and in a wide range of materials, including iron, stainless steel, Monel and other special alloys.

Send for FREE bulletin giving facts and prices. **Dept. IEN7**

Manufacturers Representatives Wanted.

Write for details. Choice territories now open.

THERMO-PANEL
DIVISION
DEAN PRODUCTS, INC. • 616 Franklin Ave., Brooklyn 38, N. Y.
STerling 9-5400

If you write maker identify as IEN - 8269

TO VIBRATION AND NOISE CONTROL

This completely new and practical guide to vibration shock and noise control provides helpful performance tables on standard units and typical case histories of special jobs that have been solved by General's custom designed and produced mountings.

It also features bushings for correction of misalignment and bearings designed to take torque action and oscillation.

For immediate help on your vibration problem, give us the facts on your company letterhead, or request a call from our field specialist on the attached coupon.

"From Plans to Products in Plastics and Rubber"

THE GENERAL TIRE
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Wabash, Indiana

☐ Send your free design guide on General Silentbloc
☐ Have your representative contact us

Company_____ Name_____

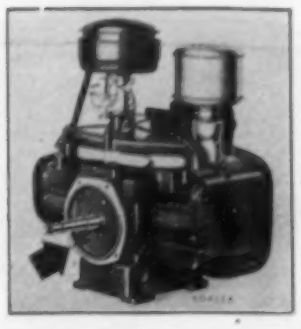
Street_____ City_____ State_____

IEN-7-54

If you write maker identify as IEN - 8271

ENGINE . . Two cylinder gasoline, air-cooled, 26.8 hp. at 3,600 rpm.

Source: KOHLER COMPANY
1230 High St., Dept. IEN, Kohler, Wis.



Weighs 225 pounds

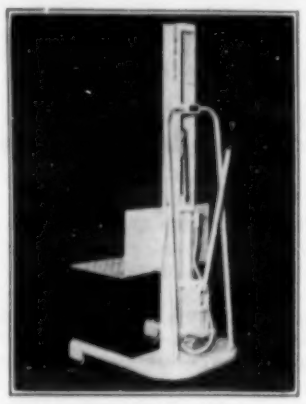
New design for direct mounting, with any one of three arrangements of mounting pad and with a variety of power take-off shafts, can be specified in the company's Model K660P air-cooled gasoline engine. This unit, previously described IEN-12540-53 in plain design, is provided with a power take-off shaft in various lengths to 6⁹⁄₁₆ inches. It can be supplied with a hand crank or electric starting equipment.

The assembly includes an oil both air cleaner, carburetor, diaphragm fuel pump, flyball governor, and muffler. Throttle and choke controls and an oil pressure gage are mounted on a panel. The governor is set for operation at 3,000 rpm. at which point the engine develops 24.4 horsepower.

If you write maker identify as IEN - 8272

TRUCK . . Hand hydraulic lift will raise a 500 pound load to 57 inches

Source: UHRDEN INCORPORATED
Dept. IEN, Dennison, Ohio



Ratings to 1 ton

Plastic wheels and casters are employed beneath this new Tubarlift Jr. hand hydraulic truck. A double acting hand pump is mounted in connection with a cylinder piston and chain attached to the steel load platform. The platform measures 16 by 24 inches. Overall truck height is 69 inches. The platform rides 5¼ in. above the floor in lowered position. List price is about $170.

If you write maker identify as IEN - 8273

ROCK DRILLING . . Mobile assembly for 4½ in. holes in any formation

Source: JOY MFG. COMPANY
Henry W. Oliver Bldg., Dept. IEN, Pittsburgh 22, Pa.

Ask for bulletin
Joy TM-500

Challenger trade names a new air operated hammer type drilling assembly for 4½-in. holes to depths of 50 ft. or more in any type of formation, including hard igneous or metamorphic rock. A 5¼-in. hammer type drill is mounted on a 26-ft. feed to provide for 20-ft. steel changes. It uses 2-in. round section steel ¾-in. air hole for blowing action. Fast drill speed results from the power supplied by the large hammer drill, by the blowing action, and by the rotating drive. Quick set up is taken care of by hydraulic control of the mast and leveling jacks.

Three mountings include a three-wheel chassis and commercial tractor power unit equipped with a hydraulic pump to raise and lower the mast and an integral dust collector, a three-wheel chassis with two reversible piston type propelling motors and hydraulic equiment that also is powered by compressed air, and an assembly made up to the drill, the feed and brackets to mount on the operator's own crawler type tractor.

If you write maker identify as IEN - 8274

CLEANING . . Rotary brush machine to scrub, sand, wax and polish a floor

Source: PREMIER COMPANY
755 Woodlawn Ave., Dept. IEN, St. Paul 1, Minn.

Attachments to order

Weight is 38 lb. for this new 12-in. brush machine. It is driven by a ½-hp. General Electric motor for connection to a 110-volt ac. power source. Brush speed is 175 rpm., less than a speed that will result in spattering. All bearings are factory lubricated and permanently sealed so the machine requires no lubrication.

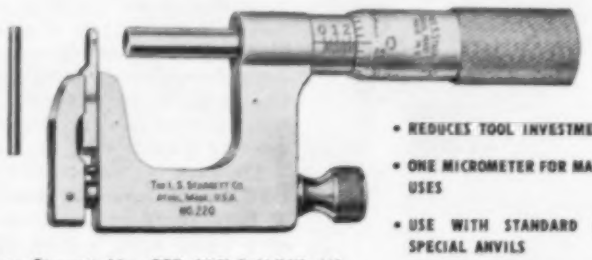
Assembly is on an aluminum base finished in gray enamel. The motor is fitted with a chromium cover and gray enameled housing. Overall height is 10⅝ in. with the brush in place. An assortment of brushes, steel wool pads and buffers is offered by the company with the machine.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8275

Another **Starrett** FIRST!

NEW No. 220
MUL-T-ANVIL
MICROMETER CALIPER
(Patented)
Range 0-1" by .001"



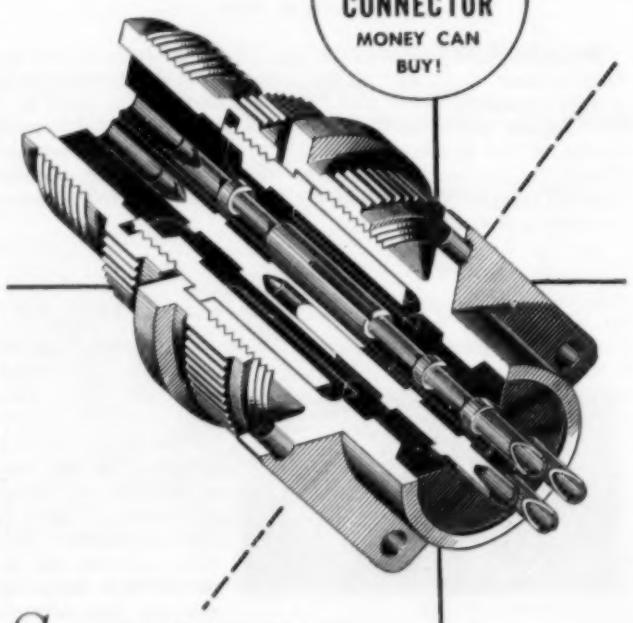
- REDUCES TOOL INVESTMENT
- ONE MICROMETER FOR MANY USES
- USE WITH STANDARD OR SPECIAL ANVILS
- ANVILS CHANGED QUICKLY, LOCKED RIGIDLY
- ONLY ONE SIMPLE LOCK SCREW ADJUSTMENT

New Starrett No. 220 *MUL-T-ANVIL* Micrometer is designed for quick, accurate measuring of tubing, cylindrical walls or work of irregular shape . . . from holes or slots to an edge . . . in places difficult or impossible to reach with an ordinary micrometer. Can also be used as a height gage. Furnished with two multi-purpose anvils, a round anvil and a double-ended flat anvil. Also accepts special anvils up to 5/16" thick. Anvils are rigidly held in a vise-type frame. Write for complete information. Address Dept. N.

Starrett®
"WORLD'S GREATEST TOOLMAKERS"
MECHANICS' HAND MEASURING TOOLS AND PRECISION INSTRUMENTS • DIAL INDICATORS — STEEL TAPES PRECISION GROUND FLAT STOCK • HACKSAWS, BAND SAWS and BAND KNIVES
THE L. S. STARRETT COMPANY, ATHOL, MASSACHUSETTS, U. S. A.

If you write maker identify as IEN - 8276

The Finest ELECTRICAL CONNECTOR MONEY CAN BUY!



SCINFLEX **ASSURES LOW MAINTENANCE BECAUSE IT PERMITS SIMPLICITY**

When operating conditions demand an electrical connector that will stand up under the most rugged requirements, always choose Bendix Scinflex Electrical Connectors. The insert material, an exclusive Bendix development, is one of our contributions to the electrical connector industry. The dielectric strength remains well above requirements within the temperature range of −67°F to +275°F. It makes possible a design increasing resistance to flashover and creepage. It withstands maximum conditions of current and voltage without breakdown. But that is only part of the story. It's also the reason why they are vibration-proof and moisture-proof. So, naturally, it pays to specify Bendix Scinflex Connectors and get this extra protection. Our sales department will be glad to furnish complete information on request.

• Moisture-Proof • Radio Quiet • Single Piece Inserts • Vibration-Proof • Light Weight • High Insulation Resistance • High Resistance to Fuels and Oils • Fungus Resistant • Easy Assembly and Disassembly • Fewer Parts than any other Connector • No additional solder required.

BENDIX SCINFLEX
ELECTRICAL CONNECTORS

Bendix
SCINTILLA DIVISION OF Bendix
SIDNEY, NEW YORK
AVIATION CORPORATION

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If you write maker identify as IEN - 8278

This glass is 3 to 5 times tougher!

Drop a ½ lb. steel ball on a ¼"-thick piece of this glass from a height of 10 feet. See the way the ball bounces? This is L·O·F *Tuf-flex** Tempered Plate Glass—3 to 5 times tougher than ordinary glass of the same thickness. And it can take greater thermal shocks—in fact it's been used for a vision "porthole" in a steel mill's electric furnace charging machine, where roaring blasts of tremendous heat hit the glass all day.

Find out how *you* can improve your product or production process with this amazing glass. Write for your *Tuf-flex* booklet (TF-8). And order *Tuf-flex* from your nearest L·O·F Distributor. Dept. 9274, Libbey·Owens·Ford Glass Company, 608 Madison Ave., Toledo 3, O.

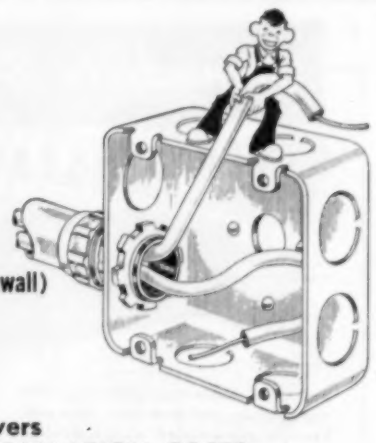
*®

L·O·F GLASS · Conquest · FIBER-GLASS

LIBBEY·OWENS·FORD
a Great Name in GLASS

If you write maker identify as IEN - 8279

T&B's NEW INSULATED THROAT CONNECTOR FOR E. M. T. (Thinwall)



- **Lowers INSTALLATION COSTS**
- **Guards against BRUISED WIRING**

A bright blue factory-inserted insulating liner completely covers the area inside the connector throat. A lip protrudes slightly beyond the connector body to form a telltale bright blue ring—similar to other T&B "blue" fittings—visual assurance for an inspector that the connection is insulated.

No separate insulating bushing needed! Installs just like a conventional connector. Same wrench size fits body and gland hexes. Extra-deep body provides a long area of firm, rigid support for tubing. Steel body, gland, ring, and locknut. Meets NEC requirements. UL approved. Write to T&B for free sample and descriptive literature or see your T&B Distributor.

T 424

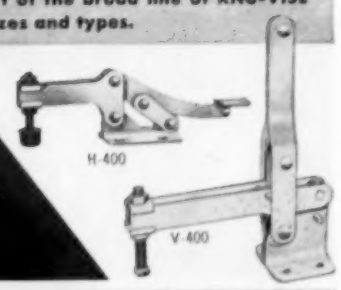
THE THOMAS & BETTS CO.
INCORPORATED
60A Butler Street · Elizabeth 1, New Jersey
Thomas & Betts Ltd., Montreal, P. Q., Canada

MANUFACTURERS OF QUALITY ELECTRICAL FITTINGS SINCE 1898

If you write maker identify as IEN - 8280

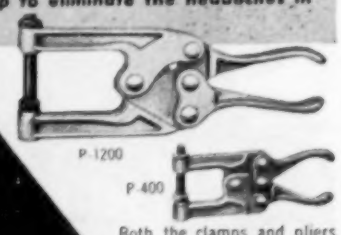
TOGGLE CLAMPS With added valuable feature — now offered to you as part of the broad line of KNU-VISE Toggle Clamps—in many sizes and types.

they're **NON-CORROSIVE!**
they're **NON-MAGNETIC!**
they're of **STAINLESS STEEL!**



TOGGLE PLIERS Here is the KNU-VISE answer to your need for a portable clamp to eliminate the headaches in spot welding aluminum.

they're **NON-MAGNETIC!**
they're **NON-CORROSIVE!**
they're of **K-MONEL!**
(stronger than steel)



Both the clamps and pliers are also available in aluminum, on special request.

Sales offices in principal cities—Teletype DE 49

KNU-VISE PRODUCTS **LAPEER MFG. CO.**
3060 DAVISON ROAD • LAPEER, MICHIGAN
WESTERN DIVISION: 422 MAGNOLIA, GLENDALE, CALIF.
CANADIAN DIVISION: HIGGINSON ENGINEERING, HAMILTON, ONT.

If you write maker identify as IEN - 8281

PURCHASING GUIDE . . Available free to Industrial Equipment News readers

Source: THOMAS PUBLISHING CO.
467 Eighth Ave., New York 1, N. Y.

First come first served

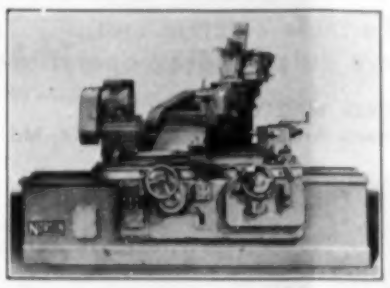
We suggest your prompt reply to this offer to send you a free copy of the 1954 Edition of Thomas' Register Junior. In it are names, addresses and ratings of selected manufacturers under some 50,000 product headings. We anticipate a demand that will quickly take all of the limited edition, judging from its growth in popularity since it was first offered through Industrial Equipment News several years ago.

The book, a companion publication to the main Thomas' Register, will contain approximately 1,500 pages in four columns, 6 by 9 in. overall. It will be about 1½ in. in thickness. It is scheduled to come from the presses about September first. We will accept reservations as long as the supply lasts. You can make yours by checking the Reader Service Form with this issue or by writing to us.

If you write maker identify as IEN - 8282

GRINDING . . Angular machine for surfaces and adjacent diameters

Source: NORTON COMPANY
36 New Bond St., Dept. IEN, Worcester 6, Mass.

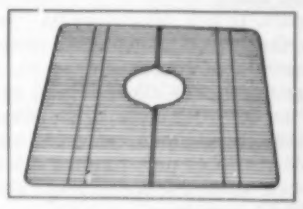


For a production line

Type CV-4 is a new semi-automatic wheel slide grinding machine to simultaneously grind the thrust surfaces and adjacent diameters of a work piece in a single automatically controlled plunge cut. The machine produces a concentric grain pattern in the finish of the shoulder and ground thrust surfaces. The machine is available in 10 and 14-in. swings and in 36, 48 and 72-in. work lengths.

The operator loads the work and moves a lever to start the automatic grinding cycle, work rotation and coolant flow. He removes the finished work at the end of the electrically controlled grinding interval.

If you write maker identify as IEN - 8283

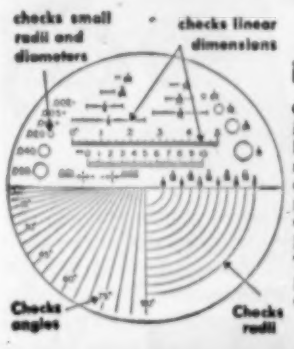


Wire guards for fan protection are available to order in welded assemblies from Peerless Wire Goods Co., 2702 Ferry St., Dept. IEN, Lafayette, Ind. Sizes and shapes of guard and wire diameter to ½ in., can be specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8284

THE **Original** BELL & HOWELL **Pocket Comparator**



Saves time and money inspecting small dimensions

● Here's *guaranteed* accuracy in checking small dimensions at a price any business can easily afford. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as chamfers, threads and small holes on production parts.

Thousands in use by America's leading precision manufacturers. It's the greatest time-saver since the micrometer!

price only $36.00 order today

A product of BELL & HOWELL CO. Distributed by
See Your National Tool Co. Representative or Local Jobber
NATIONAL TOOL CO.
11220 Madison Avenue Cleveland 2, Ohio

Write for FREE descriptive folder

If you write maker identify as IEN - 8285

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER and CONCENTRATOR*

CONTRACT DRYING

We invite inquiries for Contract Drying in our fully equipped Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique Centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling Fans and Sanitary Pumps with variable speed drives for handling liquid material and controlling the moisture.

*CONCENTRATOR AVAILABLE SEPARATELY

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

Write for New FREE Bulletin 255R

DRYING and CONCENTRATING CO.
222 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 8286

Doubly Guaranteed

BRYANT (ROCK OF AGES) GRANITE SURFACE PLATES

NOW, users of granite surface plates can get surface plates that are guaranteed both as to highest quality of stone and utmost precision of surface.

Bryant, maker of precision machine tools and gaging equipment, joins with the world-famous Rock of Ages quarry in producing these new granite surface plates which offer unsurpassed advantages in layout, inspection and assembly work.

Rock of Ages granite is unique in its exceptionally close-knit composition and flawless texture. The stone is finished on the head of the grain, a patented process.

Bryant Granite Surface Plates are economical because of their low initial cost . . . maintenance-free qualities . . . long-lasting accuracy.

Bryant *unconditionally* guarantees the flatness and accuracy of all Bryant Granite Surface Plates.

Send coupon for free specification folder

Bryant Chucking Grinder Co. IE
Springfield, Vt.
Gentlemen: Please send me your new free folder describing Bryant Granite Surface Plates
NAME ..... TITLE .....
COMPANY .....
STREET .....
CITY ..... ZONE ..... STATE .....

BRYANT CHUCKING GRINDER CO., Springfield, Vermont, U. S. A.

If you write maker identify as IEN - 8288

FACTS

ON THE FIRST SUCCESSFUL LIFT TRUCK WITH

Torque Converter

- Lengthens engine life up to 50%!
- Permits start and stop on 20% grade . . . under full load!
- Loads speedily "inched" into position—eliminates clutch riding!

Available on all BUDA 3,000 to 7,500 lb. models. Installation can be made in the field.

FREE BOOK
—gives complete information. Write today!

BUDA

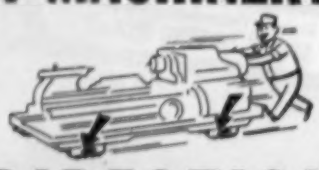
THE BUDA COMPANY • HARVEY, ILLINOIS

If you write maker identify as IEN - 8289

now you can

MOVE HEAVY MACHINERY

or tons of equipment, materials or supplies with a roller skid having the capacity to carry loads 3200 times its own weight . . .



IN ANY DIRECTION

. . . making 90° turns—or ANY kind of turn you desire up to 360°—giving you maneuverability into the tightest spots . . .

QUICKLY AND EASILY

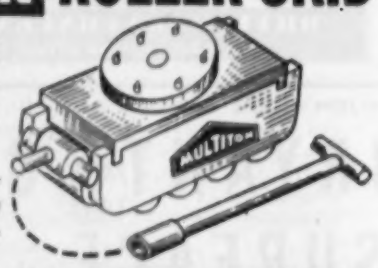
Does away with old-fashion roller-bar methods. Light in weight, easy to store, you save labor and costly handling . . .

WITH THE NEW

MULTITON ROLLER SKID

EQUIPPED WITH THE UNIVERSAL SWIVEL PLATE ACCESSORY . . .

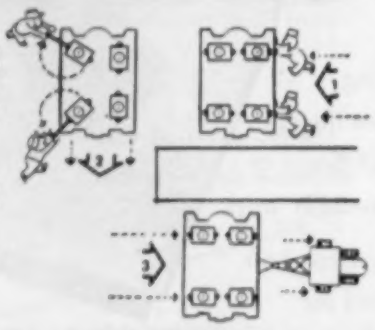
Specially designed for easy moving and turning of even the heaviest loads.



HERE'S HOW MULTITON *CAN WORK FOR YOU!*

As in this example . . .

1. Production machine is moved broadside out of location. Note position of four Universal Swivel Plate-Equipped MULTITON ROLLER SKIDS.
2. Crew is now swiveling two left-hand skids 90°, while right-hand skids have already been turned.
3. If a longer movement is necessary, power is used to pull load.



Let us show you how MULTITON can meet your specific needs. Write for Bulletin 1E today.

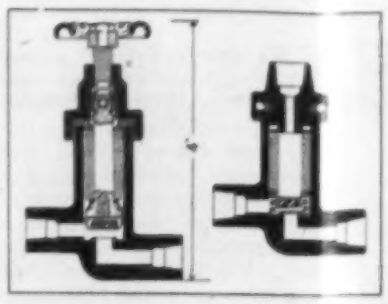
STOKVIS ✿ EDERA & CO., INC.

18 Secttoag Ave., P. O. Box 249, Port Washington, N. Y.
POrt Washington 7-3390

If you write maker identify as IEN - 8291

VALVE . . Bellows sealed design for operation by hand or by pressure

Source: CLIFFORD MFG. COMPANY
152 Grove St., Dept. IEN, Waltham 54, Mass.



Minimizes maintenance

The hand wheel and threaded stem on the manually operated assembly of this new valve, shown to the left in the illustration, includes a ball thrust in the stem assembly. The lower portion, inside the sealing bellows, does not rotate as the disc is brought down to the seat or raised from it. The stem is omitted in the pneumatic or hydraulic operating design, to the right in the illustration. Pressure to close is applied through a ⅛-in. pipe connection at the top of the valve to the interior of the bellows where it bears upon a piston head carrying the valve disc. This head is backed by a spring and will lift the disc from its seat when the pressure is released.

Both valve designs carry ⅛-in. connecting pipe threads and are suited for line pressures to 150 pounds. Both will handle volatile liquids, gases and corrosive fluids. Corrosion resistant metals, such as stainless steel and Monel Metal, can be supplied in the bellows when they are required for a given service. The valve is also suited for use in vacuum lines. Temperature range is between minus 65 and plus 250 deg. F. in the standard design.

If you write maker identify as IEN - 8292

GRINDING . . Portable electric tool, also for heavy duty sanding operations

Source: BLACK & DECKER MFG. COMPANY
715 E. Pennsylvania Ave., Dept. IEN, Towson 4, Md.

Sander-Grinder

We want to point out, for your particular information, that the "utility" portable grinder, previously described IEN-6056-54, is actually a heavy duty combination portable grinding and sanding tool suited for continuous duty on a production line. The reason for making this point is so you will not confuse this new tool under our designation of "utility" with the intermittent duty "utility" line of tools, also manufactured by the company but not designed for steady industrial use.

The new tool will cut off bolts, studs, rivets. It will remove rough areas from arc welded work. It will take irregularities from castings. It also will surface wood, gouge and shape when it is employed with an available rotary planer head. The universal motor operates at 5,200 or 6,000 rpm. and can be specified for use on a 110 or 220-volt circuit. Standard equipment includes a spindle lock, three-conductor cable and plug, reversible side handle, molded rubber pad, sanding discs, strap metal stand, clamp washer, suspension eye bolt. The tool takes a 7-in. disc. It weighs 14 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8293

HERE'S

IMPORTANT

GEAR NEWS!

See how you can get increased gear life and greater capacity in less space . . . with the hardest, toughest, most accurate industrial gears made . . . and reduce costs at the same time!

Get More

Send for this free folder now!

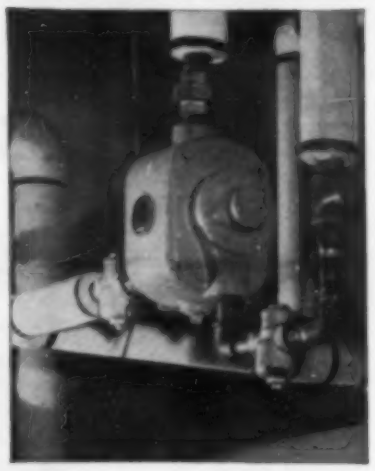
FOOTE BROS. GEAR AND MACHINE CORPORATION
4545 S. Western Blvd., Chicago 9, Ill.

Dept AD

FOOTE BROS.

If you write maker identify as IEN - 8294

SYLPHON HOT-COLD WATER MIXER No. 902



MORE EFFICIENT SAFETY CONTROL for hot-cold water mixing

● This Sylphon Mixer helps improve operations wherever tempered water is needed—showers, wash basins, industrial processes, etc. It uses hot water from any storage tank or instantaneous heater, mixing it with cold water to give desired temperature. Water mixed before delivery. Temperature remains constant. Safety feature: If either hot or cold water supply fails, flow automatically shuts off. When supply returns, flow starts up. Sizes for various capacities and supply pressures. Sturdy. Easily installed. For details, write for Catalog NN-D.

Robertshaw-Fulton
CONTROLS COMPANY

FULTON SYLPHON DIVISION • KNOXVILLE 1, TENN.

If you write maker identify as IEN - 8295

Immediate Shipment

STYLE 600 STACKING BOX

An ideal all-purpose shop box with rigid handle and hook hole each end. Sturdy all-welded construction. Heavy skids act as positive stacking lock and reinforce box at points of maximum wear. Will stack with style 500 stacking bin of same length and width.

ALL PRICES F. O. B. FACTORY OR WAREHOUSE, PHILA. . . . Complete Shop Box and Shop Equipment. Catalog and Price List on Request. Many other products available.

Product Number	Width	Length	Height	Gauge Steel	Price Plain	Price Green
601-18	10"	16"	6"	18	1.71	1.93
602-16	12"	18"	8"	16	2.59	2.89
603-18	12"	18"	6"	18	2.04	2.32
603-16	12"	18"	6"	16	2.37	2.65

PHONE • WIRE • WRITE
Baldwin 9-1805

BAY PRODUCTS INC.

3011 N. 16TH ST., PHILADELPHIA 32, PA.

If you write maker identify as IEN - 8296

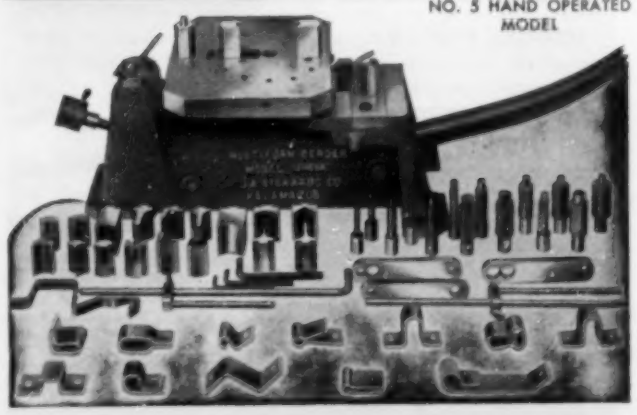
THE FAMOUS MULTIFORM

BENDER CUTTER

Produces Without Special Tooling • Saves Die Costs Saves on Expensive Presses

The illustration to the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade, Spring Plants, Radio, and Electrical Equipment Manufacturers, complete with tooling for bending material up to ⅛" to 1½".

NO. 5 HAND OPERATED MODEL



FIVE-IN-ONE-TOOL — ALSO LARGER MODELS

Air Operated Models in this and Larger Sizes Available

IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPES, CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

If you write maker identify as IEN - 8297

MORE JOBS PER ROLL

Get Gold Seal quality in **PLASTIC** electrical tape, too. It goes further — a few neat wraps and the job's finished — gives all needed dielectric on most jobs. Resists water, oil, acids, corrosive chemicals.

Single 60 ft. rolls in round metal cans and Handy Pack of ten 20 ft. rolls.

Jenkins Bros

JENKINS *Gold Seal Tape*

FRICTION • RUBBER • PLASTIC

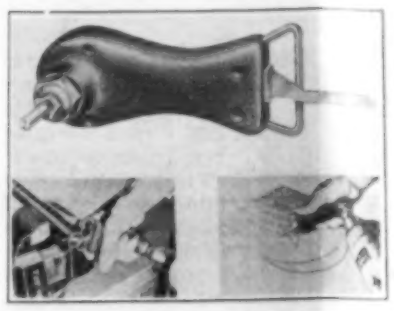
MADE BY JENKINS BROS. . . . MAKERS OF FAMOUS JENKINS VALVES

If you write maker identify as IEN - 8298

If you write maker identify as IEN - 8300

SAWING . . Attachment head applies in chuck of a portable tool

Source: PRICE & RUTZEBECK
22150 Meekland Ave., Dept. IEN, Hayward 75, Calif.



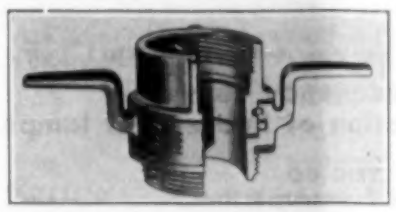
List price is $13.75

Handy Angle is a new right angle attachment with a reciprocating hole cutting saw blade. Overall length is about 7 inches. Weight is about 23 ounces. The saw can be operated at speeds from 1,800 to 3,500 rpm. to cut iron pipe, corrugated sheet metal, Masonite, Transite, wood. Special blades are available. The head can be changed to fit a right or left hand user.

If you write maker identify as IEN - 8301

PIPE FITTING . . Drum coupler applies by hand, takes valve or gate

Source: OPW CORPORATION
2735 Colerain Ave., Dept. IEN, Cincinnati 25, Ohio

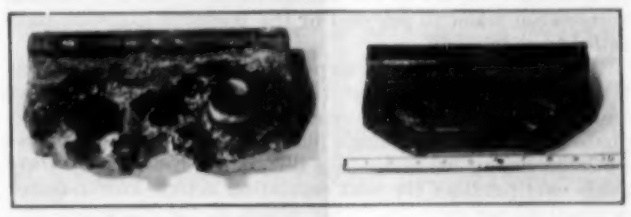


Swivels on spring wire

Molygate is a new assembly of lever equipped threaded base and O-ring sealed nipple for application on a drum. The nipple takes a gate or faucet. It permits turning either one for discharge at a desired angle. The coupler can be removed from one drum and applied on another one quickly. Thread size is 2 in. on both ends. Construction is in bronze.

If you write maker identify as IEN - 8302

Porcelain enamel has been employed by Erie Enameling Co., 1400 W. 20th St., Dept. IEN, Erie, Pa., to provide a corrosion



proof coating over a number of gas burners employed in a critical process. Corrosive atmosphere caused excessive oxidation of the cast iron in the burners and this in turn contaminated the product until the burners were coated with porcelain enamel. There has been no difficulty from contamination by scale or rust for 14 months following the enameling operation. The burners operate in an ambient temperature of 600 to 800 deg. F. This is less than the 1,600 deg. F. temperature at which the porcelain enamel was fired so the finish is not affected.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8303

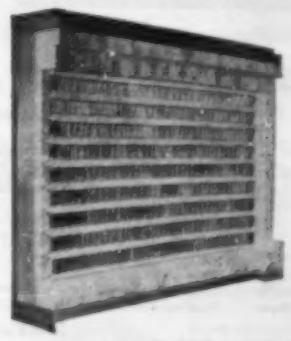
A RADIANT HEAT SOURCE, *Easily Installed*

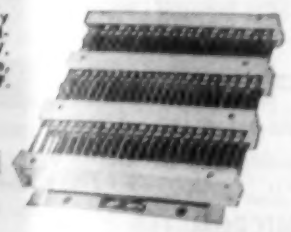
"FOLDED-and-FORMED" Heating Elements

are quickly, easily installed in furnaces, ovens, kettles, etc., to assure a heat source unequalled for quick rise to temperature; long-life efficiency; low-cost maintenance and repairs.

STANDARD RACKS

Size 12" x 12". Installed vertically or horizontally, side-by-side, end-to-end, or in banks, to meet K. W. requirements. Five-year guarantee, at temperatures to 750° F. or 1350° F.





CUSTOMBUILT RACKS

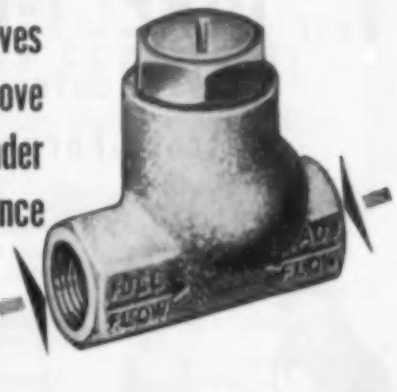
Available in wide range of sizes and combinations, to fit any flat or curved area, to provide maximum K. W. at temperatures to 1850° F.

Hundreds of different applications are demonstrating the outstanding efficiency and economy of "F-and-F" Heating Elements. You, too, can use them *profitably!*

REN INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA 27, PA

If you write maker identify as IEN - 8304

Use Schrader flow control valves to improve Air Cylinder Performance



Positive control of compressed air is provided by **Schrader Flow Control Valves**. They control piston speed in either direction without reducing the force.

An adjustment screw permits quick increase or decrease of flow, from zero to full.

Available in five sizes, ⅛" to ¾" thread, and made of corrosion-resisting materials throughout, Schrader Flow Control Valves have simple construction readily serviced without being removed from the line.

Send today for complete information on Schrader Flow Control Valves. They'll help make air a more useful tool in your plant.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-41 • Brooklyn 38, N. Y.

If you write maker identify as IEN - 8305

☑ FOR FACTORIES

☑ FOR INSTITUTIONS

☑ FOR COMMERCIAL BUILDINGS

BRADLEY washfountains and multi-stall showers

• Bradley Washfountains—the standard for over 30 years. Serve up to 10 persons simultaneously.

• 5- and 3-stall Bradley Showers are complete units—cut piping and installation costs.

• The Bradley DUO has foot-control too for maximum sanitation. No faucets to touch.

• Made in precast stone, enameled iron and stainless steel; full circle, and semi-circular wall models.

Bradley Washfountains and Multi-Stall Showers provide the utmost in economical, sanitary facilities. Illustrated Catalog 5204 includes complete details and installation suggestions. Write for free copy today.

BRADLEY WASHFOUNTAIN CO.
2219 W. Michigan St., Milwaukee 1, Wis.

If you write maker identify as IEN - 8306

standardize on standard HALLOWELL

POSTURE STOOLS AND CHAIRS

designed for comfort while working

LOOK AT THESE FEATURES

• Posture back rests, interchangeable and adjustable

• Spring steel back bars for proper posture

• Seats designed for comfort, plain or Presdwood covered

• Angle braces and angle legs for strength and rigidity

This and other HALLOWELL Posture Stools and Chairs are stocked and sold by leading industrial distributors. Write for literature. STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

HALLOWELL SHOP EQUIPMENT DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 8307

Fast DIRECT-CAST Investments...with new Detroit Furnace

Type IC Furnace with mold attached.

This new direct-casting Detroit Electric Furnace produces better precision castings in less time. Fast, indirect arc melting plus direct furnace-to-mold casting cuts production cycle to as little as 7 minutes.

Uniform melts bring lowest reject rate, increases over-all efficiency. Low power consumption, high utilization of heat for operating economy. Get full information on Type IC Detroit Electric Furnace for higher precision casting production. Write today!

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL—Equipamentos Industrias, "Eisa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castellvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cia Proveedora de Industrias, Atenas 32-13, Apartado 27A3, Mexico 6, D. F., Mexico; EUROPE, ENGLAND: Birlec, Ltd., Birmingham.

If you write maker identify as IEN - 8308

FASTER...EASIER

PRECISION DEW POINT INDICATOR

★ The Alnor is the only dew point indicator that is a complete unit in itself...it is readily portable and does not require external coolants or auxiliary apparatus.

★ Controlled testing conditions are assured. Indications take place in an enclosed chamber... dew or fog is observed suspended in air—not on a polished surface. This means greater accuracy, faster reading—every time.

★ Simple, direct operation of the Alnor Dewpointer assures laboratory accuracy by non-technical personnel. Substantial carrying case protects it against the usual hazards of portable use.

★ Available in three ranges—for dew points between minus 20 deg. F. and room temperatures, from minus 80 deg. F. to 0 deg. F., and from -80 deg. F. to room temperature.

Write for Descriptive Bulletins. Illinois Testing Laboratories, Room 517, 420 N. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 8309

SAVE 50% and more in Labor - Material with FencPainteR

For WOOD - METAL BRICK - STONE CONCRETE

Hundreds of industries and institutions all over America are using the FencPainteR applicator system of painting at immense savings. It's five times faster than brushing methods. Irregular and corrugated surfaces painted with the same facility and covering power as smooth surfaces. One concern painted 6 ft. wire fence at a total cost of only 20c per lin. ft. FencPainteR enamels contain only top-notch ingredients — go much farther — are more economical in the long run.

SPECIAL TRIAL OFFER — Including industrial size FencPainteR and 5 gal. FencPainteR aluminum enamel, 1 gal. solvent. Complete, only $57.00. Enough to do 300 lin. ft. of 6 ft. chain link fence. (Add $5.00 for gray, white or black — $10.00 for red or green).

THE ONLY ROLLER MADE WITH CAPILLARY ATTRACTION (PAINT HOLDING POWER)

FencPainteR Corporation
2314 W. Van Buren Street Dept. IE Chicago 12, Ill.

MAIL COUPON for new 32 page illustrated brochure with full details covering FencPainteR products and their use.

FencPainteR Corp., 2314 W. Van Buren St. Dept. IE, Chicago 12, Ill.
☐ Please rush Free 32 page Brochure
☐ Send Special Trial Offer, complete (Color desired _____) $ _____
Name _____
Address _____
City _____ State _____

If you write maker identify as IEN - 8310

STORING . . Card conveyor cabinet holds 300,000 record cards in trays

Source: DIEBOLD INCORPORATED
818 Mulberry Road S. E. Dept. IEN, Canton 2, Ohio

Big capacity, small space

Pressing a selector button on the front folding shelf of this new Super Elevator File brings the selected row of card trays into correct working position. Rotation is in either forward or reverse direction, whichever requires the shortest travel for the selected tray. Greatest waiting interval is 3 seconds.

The trays measure 10 in. from front to back. They are light in weight, portable and interchangeable. They can be lifted out and rearranged as desired. Various sizes are available for a variety of card sizes. Each permits opening the card to a filing "V" at any position. It will hold that arrangement until a removed record is returned. Place markers are not required. Operation is by a 110-volt ac. motor arranged so a hand crank also can be employed in the event of current failure. The steel cabinet is finished in baked gray enamel and is equipped with a roll top locking cover shown in the inset illustration.

If you write maker identify as IEN - 8311

LIGHTING . . Frequency converter for operation of fluorescent lamps

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Improves light efficiency

Light output is improved and heat loss is minimized by application of a new 5-kw. static frequency converter. It applies 360-cycle square wave ac. at 600 volts to operate fluorescent lamps. Noise is minimized since the converter can be located remotely. Fixture weight can be decreased since no transformer type ballast is required. The new converter will start and operate fifty Type 96T8 or Type 96T12 lamps with a 0.33 microfarad capacitor in series with each lamp. Current can be regulated to all of the lamps in the circuit by a single knob in a range from 300 to 500 milliamperes. Operation remains stable even when 10 per cent of the lamps in a circuit have failed in operations.

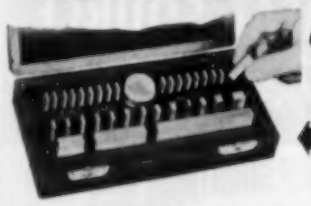
The converter includes a step-up transformer, current regulator, square wave generator. It makes the conversion in three stages. The first stage changes the 440-volt 60-cycle three-phase input to 180-cycle single phase. The second stage doubles its frequency to 360 cycles. The third stage corrects the wave shape and provides the load regulating action. Power factor is about 90 per cent due to the action of the correction unit that is included with the converter. Efficiency, with the power factor corrected, is about 70 per cent.

Standard 60-cycle wiring can be employed to deliver power to the load. The output circuit is equipped with a center tapped reactor so a third wire can be used to minimize the line-to-ground potential. Overall converter dimensions are 31 by 25½ by 55 inches. Weight is 1,350 pounds. The power factor corrector portion of the assembly measures 14½ by 25½ by 13 in. and weighs 125 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8312

ULTRA-CHEX GAGE BLOCKS for Every Need!



Supplied in one Superior Accuracy
5 MILLIONTHS ± ACCURACY

34 BLOCK SET.....$125.00 (Shown) Code GADHI Incl. Opt. Parallel

82 BLOCK SET.....$275.00 Code GHEYS In Case

9 BLOCK SET FOR INDIVIDUAL MECHANIC $22.50 Opt. Parallel $5.00 Extra Code GADFO

These Sets will supply the needs of any discriminating shop that must work to gage-block precision.

IMMEDIATE DELIVERY

Write for Illustrated Folder—Code GINVU

"Lustro-Chrome" MICROMETER

Take the GLARE out of Micrometer Reading with the New "Lustro-Chrome" MICROMETER

MEASURE TO 1/10,000th

No. 901 C 0-1" Size with LOCK NUT and RATCHET and 10th Vernier as shown $13.25 Code GHAEF

All graduations are well-defined black lines on dull chrome surface for easier and surer reading, even in poor light. Guaranteed accurate within one half of a ten thousandth of an inch.

This tool with TUNGSTEN CARBIDE tipped anvils $15.75 Code GHAEF-CA

Drop-forged model with chrome finished micrometer head from $8.25 up.

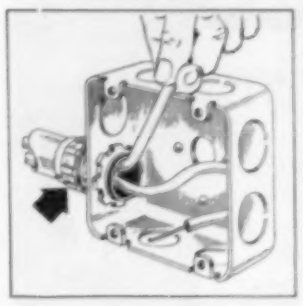
Ask for Micrometer Catalog—Code GINWY

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as IEN - 8313

CONDUIT FITTING . . Connector carries plastic insulating throat

Source: THOMAS & BETTS CO.
60 Butler St., Dept. IEN, Elizabeth, N. J.



UL approved

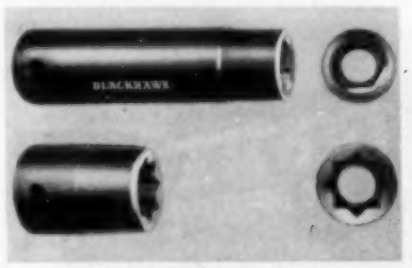
Sizes range from ½ to 2 in. for electrical metallic tubing in this new steel connector fitting. It carries a bright blue plastic bushing that eliminates the need to install a separate insulating bushing at conduit terminations in the field. It presents rounded edges that will not damage wire insulation. It projects a little from the connector body to show a tell-tale blue ring to signal that the connection is insulated.

The unit is made of strip steel on automatic machines for accuracy to dimension and freedom from blow holes and brittleness. It provides ample area for firm rigid support of the tubing wall. One wrench fits the gland nut and the body. Case hardened locknuts on the ½ and ¾-in. sizes eliminate need to hold the locknut while making a tight connection in a junction box.

If you write maker identify as IEN - 8314

WRENCH . . Steel impact sockets, sizes ½ and ⅝ in., for general use

Source: BLACKHAWK MFG. COMPANY
5325 W. Rogers St., Dept. IEN, Milwaukee 46, Wis.



Additions to line

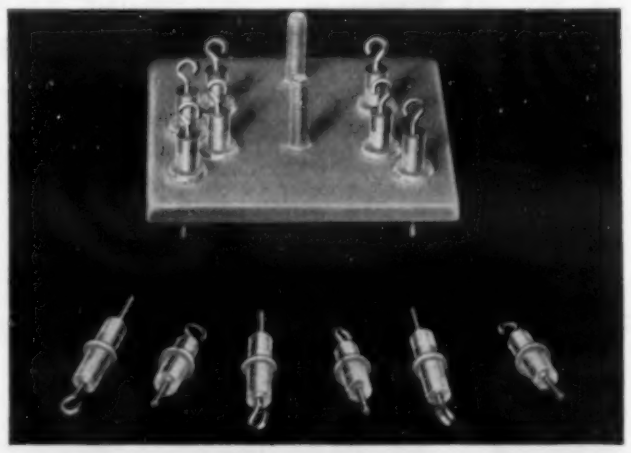
New wrench line includes ½ and ⅝-in. drive sockets with hexagon openings in regular and long lengths plus double square openings in regular length. Each socket is made of electric furnace alloy steel. Each is hot broached, heat treated and cadmium plated. The units are designed for general application on production lines and in maintenance operations. The new units meet the new U. S. Government Specifications.

If you write maker identify as IEN - 8315

Temperature changes that take place during travel of work through a conveyor type oven can be recorded by a new thermometer. It rides through the oven with the work, emerges with the temperature record on its circular chart. Bristol Company, 107 Bristol Rd., Dept. IEN, Waterbury 20, Conn., will send you a copy of its Bulletin T855 on the subject.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8316



TERMINALS

. . . with high breakdown voltages, high damage resistance.

Insulating terminals with high dielectric strength KEL-F® polymer raises their "tracking" voltages up past 7500 v, provides positive insulation under high humidity and thermal cycling from minus 100° F. to 300° F. Under severe shock or stress, resilient, dimensionally-stable insulation will not crack or cause seal to fail.

Terminals and terminal boards of many types are produced, insulated with clear or colored KEL-F polymer.

KEL-F

For the names of manufacturers of these and other products of Kel-F polymer write for descriptive "BUYERS GUIDE" . . .

Chemical Manufacturing Division—Dept. A-7
The M. W. Kellog Company
Danforth Avenue Jersey City 3, N. J.

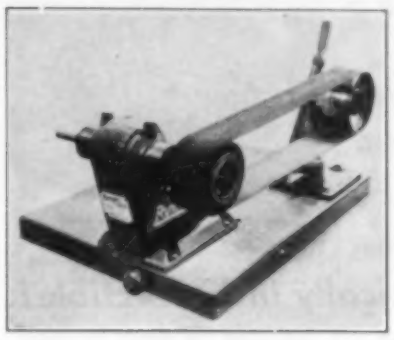
TRI-FLUORO-CHLORO-ETHYLENE POLYMERS

®—KEL-F" is the registered trademark of The M. W. Kellogg Company

If you write maker identify as IEN - 8317

GRINDING . . Abrasive belt machine employs an air inflated contact wheel

Source: NU-MATIC GRINDERS INC.
8224 Carnegie Ave., Dept. IEN, Cleveland 3, Ohio



For utility use

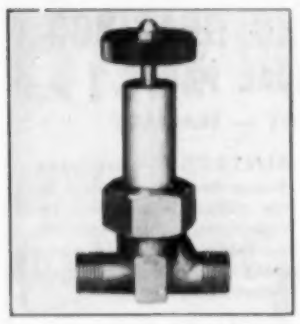
Illustrated is plate mounted assembly of the company's new abrasive belt grinding machine which includes an idler, a 60-in. abrasive belt and a 5 or 8-in. Nu-Matic air inflated contact wheel, the same as the unit previously described IEN-10458-48. The wheel depresses and presents a flat grinding surface in contact with the work when the work is pressed against it. It resumes its cylindrical shape when work pressure is released.

The plate assembly mounts on a bench or pedestal. The driving motor and connecting belt are located beneath the top surface. The belt extends upward into the head housing to engage a sheave in the housing. A spring loaded leveler, on the idler, permits moving the idler for quick belt change.

If you write maker identify as IEN - 8318

VALVE . . Stainless steel for corrosive fluids, high vacuum

Source: HOKE INCORPORATED
203 S. Dean St., Dept. IEN, Englewood, N. J.



Stainless 316

Series 440 designates a new line of stainless steel valves in which the seal is an 18-8 stainless steel arc welded bellows. The seat and gasket are made of teflon. The stem seats in reverse when the valve is full open to prevent leakage of corrosive fluids in the event of bellows failure. Sizes are ⅛ to ½-in. pipe thread and ¼-in. and ½-in. Swagelok tube ends. The ⅛ and ¼-in. sizes can be specified for pneumatic operation in remote locations.

If you write maker identify as IEN - 8319

Spindle weight, in a hand tapping mechanism, is taken by a counterweight so there is no axial pressure on the tap. This leaves the tap free to cut without drag and prevents breakage, particularly in small taps. Lassy Tool Co., 96 Bohemia St., Dept. IEN, Plainville, Conn., supplies the mechanism and will add the counterweight to specification. It can supply the counterweight also for its equipment now in service.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8321

DRYING . . Dielectric core oven removes moisture, cures resin binder

Source: FOUNDRY EQUIPMENT CO.
1831 Columbus Road, Dept. IEN, Cleveland 13, Ohio

Bulletin 654

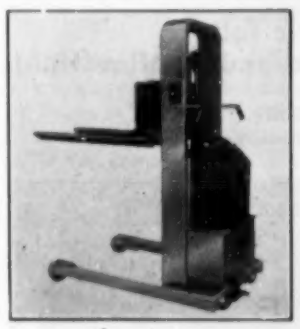
Three sizes, rating 15, 25 and 60-kw. output, make up a new line of dielectric core ovens to receive green cores and carry them through a high frequency field. Heat is generated uniformly within each core, as its molecular structure is acted upon by the rapidly reversing field, to evaporate the moisture and cure the low temperature synthetic resin binder. As the water is evaporated, the core becomes a non-conductor and its temperature drops. As a result, it is not possible to overbake the work. The assembly, rating 25 kw., will dry and cure approximately 1,350 lb. of cores per hour containing 3 per cent moisture.

The oven, power generator and conveyor compose a single unit measuring 22 to 32 ft. in length. Conveyor section is 4 ft. wide in two of the sizes and 6 ft. in the other. The equipment is protected against damage to it or the operators in connection with the high voltage it employs.

If you write maker identify as IEN - 8322

TRUCK . . Electric fork lift, battery power, hand propelled, ½ ton

Source: LEE ENGINEERING CO.
Box 615, Dept. IEN, Pawtucket, R. I.



Catalog 554

A storage battery provides power for a motor driven Presto hydraulic pump and cylinder in the illustrated Model B-866 assembly in the company's new line of fork type and platform power and manually operated lift trucks. All are mounted on roller bearing wheels at the front and roller bearing casters at the rear. They are moved from one location to another by hand. The battery powered assemblies are equipped with a 110-volt built-in charger for over-night connection to a power source.

Load capacity, in each case, is ½ ton. Overall height ranges from 66½ to 91½ in. for three lift heights of 52, 66 and 78 inches. Upright width measures 20 inches. The forks can be positioned for a spread between 8 and 36 inches. They are 36 in. in overall length. Wheel base is minimum at 24 in. and maximum at 30½ inches. Overall length of the outriggers measures 43 inches. List price for the manually operated assemblies is $215 to $275. List for the battery equipped units is $525 to $595.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8324

60-DAY FREE TRIAL
of America's most popular industrial stool

A tired worker costs MUCH more than a good chair

- 4-way adjustable backrest
- Scroll shaped posture seat
- Tamper-proof tubular all-welded construction
- 3 adjustable height ranges.

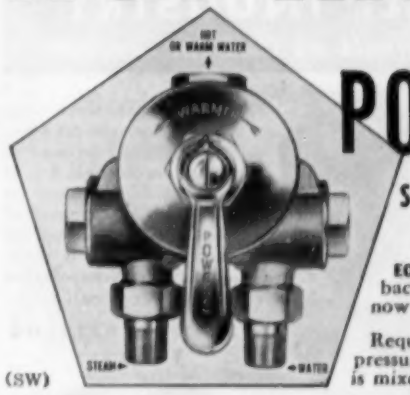
Now test Royal's famous No. 515 stool in your own plant without cost or obligation. See why the country's top firms choose it for superior versatility and durability. Write for free trial stool today!

metal furniture since '97 Royal

ROYAL METAL MANUFACTURING CO.
175 North Michigan Avenue, Dept. 207, Chicago 1

If you write maker identify as IEN - 8325

For a Small, Localized Supply of Warm or
HOT WATER
Use
POWERS



STEAM and WATER MIXERS

(SW)

ECONOMICAL—Quickly pay back their cost. Thousands now in use. *Easy to install.*

Requires steam and water pressures above 10 lbs. Steam is mixed directly with water.

MANY USES—Industrial processes; 180° F. sterilizing rinse water for dishwashers; washing oil drums, trucks, etc.

TEMPERTAURE RANGE — Any temperature desired between that of incoming water and 200° F.

HAS PRESSURE EQUALIZING VALVE—which prevents delivery temperature changes caused by fluctuating pressures of steam or water.

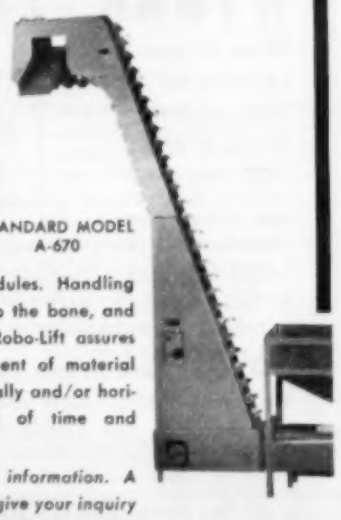
SMALL SIZE— ½" pipe size can be held in the palm of the hand, weighs 12 lbs. ¾" size weighs 23 lbs.

CAPACITIES— based on steam and water at 45 lbs. pressure each, water at 60° F., and delivery temperature of 160° F.:—½" size=3 gals. per min.; ¾" size=8 gpm. Mixing steam with 140° F. water increases delivery about 75%. Often used as a small booster heater. ***WRITE for Bulletin 369***

THE POWERS REGULATOR COMPANY
3400 Oakton St., Skokie, Illinois
Established 1891 • Offices Over 50 Cities • See Your Phone Book

If you write maker identify as IEN - 8320

IF YOU WORK WITH FREE-FLOWING SOLIDS AND POWDERS
You'll Want to Know More About
ROBO-LIFT ELEVATING CONVEYORS



STANDARD MODEL A-670

With a Robo-Lift, it's easier to keep pace with high production schedules. Handling time and damage are cut to the bone, and costs, too! That's because Robo-Lift assures the gentle, sanitary movement of material and finished products vertically and/or horizontally—with a minimum of time and attention.

Write today for complete information. A Counsel Representative will give your inquiry his personal attention.

Counsel
MACHINE COMPANY, INC.
8 Hathaway Street, Wallington, N. J.

If you write maker identify as IEN - 8323

WOMEN WORK WELL WITH RAYTHEON WELDPOWER® WELDERS

Says BOMAC LABORATORIES, Beverly, Mass.

In selecting Raytheon WELDPOWER units exclusively for production welding parts for Hydrogen Thyratron tubes, Bomac Laboratories chose Raytheon WELDPOWER because:

- Unskilled women operators learn to make acceptable welds in a matter of hours.
- Oxides and annealing caused by welding are eliminated.
- Maintenance and interchange of electrodes are easily accomplished.

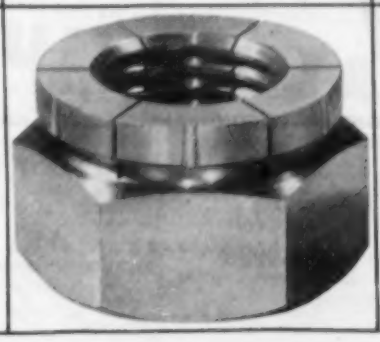
Learn the many advantages of joining ferrous, non-ferrous or dissimilar metals with Raytheon Condenser Weldpower Control Units and Welding Heads. Available in a range of sizes.

Send sample parts or write for details to Dept. 6270IN-7.

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago • New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 589 FIFTH AVENUE, NEW YORK CITY

If you write maker identify as IEN - 8326

they won't work loose



FLEXLOC Self-Locking Nuts lock and stay tight, no matter how severe the vibration. Yet they can be easily removed and reused repeatedly. They are stop nuts too; they stay put in any position on a bolt when the locking threads are fully engaged. And FLEXLOCS are one piece, all metal—nothing to assemble, come apart, lose or forget. See your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

FLEXLOC LOCKNUT DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 8327

Quadriga®
WASHERS and STAMPINGS
Parts Assembly Work

√ Low Cost
√ Prompt Delivery
√ Precision Controlled to Your Exact Specifications

Washers and stampings of all types and materials, including tension, spring, formed, cupped, finishing and wire terminal washers . . . custom-fabricated to your requirements.

Complete die-making facilities . . . press capacity to 150 tons, depth of draw to 4 inches.

High production, quality controlled parts assembly work at economical cost.

Request full information. Send B/P, Sample or Data for estimate. Ask for free catalog.

THE QUADRIGA MANUFACTURING CO.
215A West Grand Avenue Chicago 10, Illinois

If you write maker identify as IEN - 8328

Fans.. Blowers
FOR ALL INDUSTRY
"Standard Units or Custom Design"

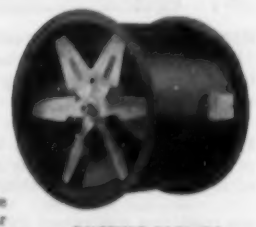
DOUBLE SWIVEL AEROSPOT

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable: 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 36".

4 Blade DYNAFLOW Unit
Also available in two and four blade types. Sizes, 16" to 36".



DUCTYPE BLOWER
Direct driven, single or tandem fan units. Also available with belt drive. Sizes, 16" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 322 E. COLFAX AVE. SOUTH BEND, IND.

If you write maker identify as IEN - 8329

NOW! a new color for Gaco N-700
Neoprene Maintenance Coating
Available for the first time in
ALUMINUM*

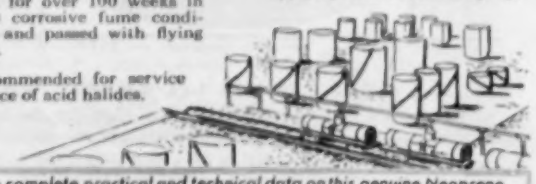
GACO NEOPRENE PROTECTION PLUS—GACO N-700, Aluminum, gives all the performance-proven corrosion protection found in GACO N-700, Gray and Slate Black, *PLUS* the advantages of the aluminum color.

TIME-TESTED—GACO N-700, Aluminum, has been field tested for over 100 weeks in severe corrosive fume conditions, and passed with flying colors.

*Not recommended for service in presence of acid halides.

REFLECTS LIGHT & HEAT—GACO N-700, Aluminum, adds the light and heat reflecting qualities of aluminum to the long-lasting corrosion protection of genuine GACO Liquid Neoprene.

EASY TO APPLY — GACO N-700, Aluminum, is easy to apply by roller, brush or spray.



Send me complete practical and technical data on this genuine Neoprene Maintenance Coating that goes on like paint at lower applied cost.

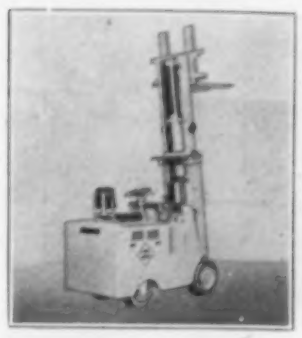
NAME _____
COMPANY _____
ADDRESS _____

Send this coupon to:
GATES ENGINEERING COMPANY
100 S. West St., Wilmington, Delaware
The pioneer maker of Neoprene coatings and linings

If you write maker identify as IEN - 8330

TRUCK . . Electric fork lift rates 2½ ton on 48 in. load length

Source: ELWELL-PARKER ELECTRIC CO.
4205 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio



Bulletin B-519

Model F-30T5 is a new battery powered fork truck available in two standard models. One measures 68 in. in height in retracted position and is designed for freight car and truck loading. It employs a duplex lift cylinder providing 51 in. of initial lift. The other is an 83-in. design for high tiering where head room is unrestricted. It is equipped with a single-acting cylinder providing 17 in. of initial lift. Maximum lift height is to 136 and 166 inches. The lift speed is at 25 fpm. with a rated load and at 40 fpm. free. Lift movement and tilt, 12 deg. to the rear and 5 deg. to the front, are by hydraulic power supplied by a motor driven pump. Lowering speed is 45 and 35 fpm. respectively.

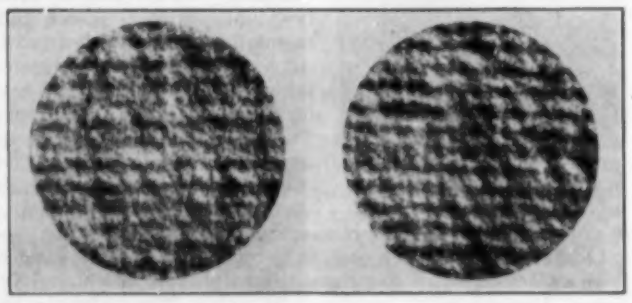
The truck is steered at a caster type axle in which the caster forks are mounted in a rocker beam with a taper roller bearing at the top for alignment and a ball thrust bearing below. Each wheel is mounted on taper roller bearings equipped with dust seals. Sealed spherical type self-aligning steering rod connections are standard equipment. Brakes are foot operated hydraulic automotive type operating on the drive wheels. The brake shoes are mechanically interlocked with the operator's seat so they are applied when he leaves the seat and will hold in that position.

Travel movements are controlled by a contactor for four speeds forward and reverse. A hand operated lever on the steering column selects direction. A foot operated accelerator pedal controls speed to a maximum of 5½ mph., with a rated load, and 6 mph. free. Wheel base measures 46 in. with overall length at about 117 in. with 36-in. forks. Turning radius is 83 inches. The truck will operate in 70-in. intersecting aisles with 3-ft. forks.

If you write maker identify as IEN - 8331

FILTERING . . Synthetic felts for use on acid and alkaline fluids

Source: BROSITES PRODUCTS CORP.
50 Church St., Dept. IEN, New York 7, N. Y.



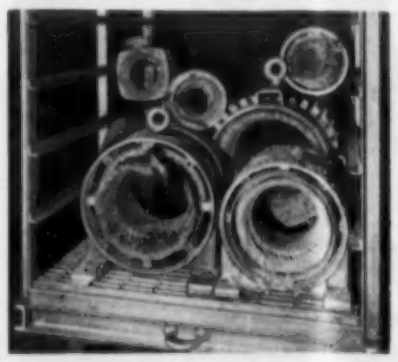
Nylon Dacron

The illustration shows micro-photographs of the company's new nylon felt, to the left, and dacron felt, to the right, in its Filtaweb line, previously described IEN-6257-54. Both felts are graded for porosity and require no cloth backing support. They can be employed for liquids to 200 deg. F. and can be used to handle flue gases that attack cotton or wool. Three grades, based on weight of 10 oz. per square yard, rate 200, 500 and 2,500 cc. per min. with filtration through an area 2 in. in diameter and a pressure head of 8 inches.

If you write maker identify as IEN - 8332

HEATING . . Gas fired oven burns insulation from motors, coils

Source: DESPATCH OVEN CO.
337 Despatch Bldg., Dept. IEN, Minneapolis 14, Minn.



Bulletin 228

A gas burner, firing into the rear of this new oven, supplies a pre-mixed and proportioned air and gas mixture for the combustion chamber. The flame raises temperature within the oven and holds it at a point that will burn the insulation from stators, rotors, coils that are to be rebuilt. Two oven sizes provide heating chambers that measure 24 by 36 by 48 in. and 48 by 60 by 66 inches.

Construction includes 16-gage interior and exterior shells with 6 in. of rock wool insulation. Air circulation is controlled. Fumes, soot and volatile gases are removed by a motor driven blower. An automatic program controller and a manual reset high limit temperature control are standard equipment. A time clock, to shut off the oven, can be specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8333

NEW
DWYER FLEX-TUBE Series 25
THE MANOMETER THAT
• COSTS HALF as much
• Is only HALF as BIG
• IS ACCURATE to 3%
• Does 4 NEEDED JOBS

and is practically indestructible!

Only 7⅜" wide, 5⅞" high and 1⅜" deep. Housing and tube of tough Tenite II plastic. Logarithmic indicating tube for accurate and easy reading. Two ranges: 0-3" and 0-7". Gages (1) static pressure, (2) draft, (3) filter resistance and (4) velocity from 0-7000 fpm. (with pitot tube).

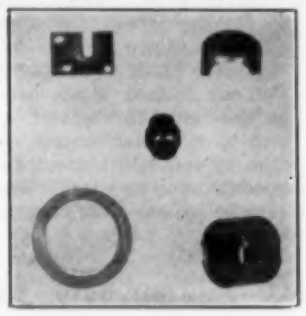
A complete "package". Unit includes all necessary connector tubing and fittings, mounting screws, fluid, instructions.

Write for informative catalog page

DWYER Specialized INSTRUMENTS and GAGES
F. W. DWYER MFG. CO. • 307 SO. WESTERN AVE. • CHICAGO 12, ILL.

If you write maker identify as IEN - 8334

SELF-LUBRICATING BEARINGS AND MECHANICAL PARTS
SINTRLOY — DUCTILOY — SEALALOY



SINTRLOY — Powdered Bronze Bearings are used by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

DUCTILOY—An extremely tough bearing material that is actually malleable and has a high resistance to shattering. Powdered Bronze Bearings and Mechanical Parts to be used in heavy duty applications where greater strength and shock resistance are required.

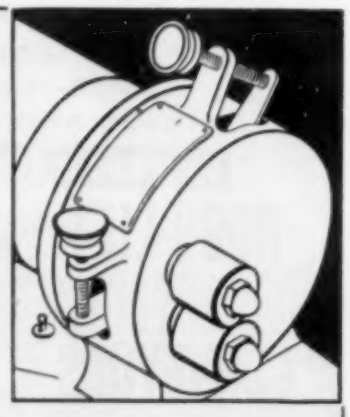
SEALALOY—Powdered Bronze Material used for mating rings in rotating mechanical seals to give excellent wearing qualities and shock resistance. Manufactured to your exact requirements.

National's widely experienced engineering and design departments are always at your service to help you with parts that must be specially designed to their particular application.

NATIONAL MOLDED PRODUCTS, INC.
1945 Mill Street St. Marys, Pa.

If you write maker identify as IEN - 8335

NEW
WYBAR
Wire Stripping Machine for Film Insulated Wires A.W.G. #50 thru #23



Save time and decrease rejects with the new, streamlined Wybar wire stripper. Small enough to be used at the winding machine. For a top quality product . . . write for complete information or a demonstration in your own plant—no obligation.

NOW — Save money Fiber Glass (standard) stripping wheels. The *Wybar* Cost is *sliding* down!

A.W.G.	COLOR CODE	
#23-26	Rose	$4.40 per pair
#27-30	Red	
#31-34	Green	
#35-39	Blue	
#40-50	Yellow D	$4.90 per pair
#23-50	White	$4.40 per pair

Quantity	Discounts
11-24 pair	5%
25-99 pair	7½%
100-199 pair	10%
200-499 pair	12½%
500-over pair	15%

WYBAR ELECTRONICS INC., Syracuse 1, N. Y.

If you write maker identify as **IEN - 8336**

POWER PLUS — at 2000 blows a minute!

The new CP Universal Electric Impact Wrench's powerful impact action runs nuts or screws . . . and taps faster and easier. Designed with a 2" diameter nose for tight spots, it's rated at ⅜" bolt size capacity but in most cases has a bonus capacity of ⅝". One-hand operation is afforded by its centered pistol grip and reverse switch in the handle. And the reverse switch interlock prevents reversing while running. Has a "unitized" motor which assures long life plus resistance against vibration.

Chicago Pneumatic *8 East 44th St., N. Y. 17, N. Y.*

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as **IEN - 8337**

Brand your equipment with pf decals

Tapered TIMKEN Roller BEARING EQUIPPED

- low cost
- good looking
- permanent

Your nameplate identifies your equipment, keeps your trademark before prospective buyers. PF decals are designed with your product in mind. They go on quickly and last indefinitely. What's more, if you require operating instructions or wiring diagrams, PF decals put across your story at comparatively little cost. It's the brightest way of branding your equipment or setting up instructions that stay.

Learn how PF decals can do a job for you. Art service, consultation, and estimates without obligation. Send today for free booklets, "Decal-Ways to Sales," "PF Window Valances and Window Signs" and "How Leading Advertisers Use Decals."

PALM, FECHTELER & CO.

85 MAPLE STREET • Dept. IEN-7 • WEEHAWKEN, N. J.

If you write maker identify as **IEN - 8338**

ONE CONTROL DOES THE JOB OF TWO

DA-400

Available with Explosion-Proof or Weatherproof Housing

Mercoid DA-400 Series Pressure Controls incorporate a single bourdon tube which actuates two independently adjustable Mercoid magnet operated mercury switches to accomplish various circuit operations. For example:

1. Close one alarm circuit at high pressure and another at low pressure with both circuits open over operating range.
2. As an electrical interlock to open one circuit as pressure rises above and the second circuit as the pressure drops below operating range.
3. To provide two-stage control by opening or closing one circuit on a rise in pressure and the second circuit on a further rise in pressure.

Equipped with calibrated dial and outside adjustments—Ranges 0-30 psi to 300-2500 psi—The Mercoid magnet operated mercury switches are not affected by harmful effects of dust, dirt, or corrosion—your assurance of millions of operations.

Write for Bulletin 5P

THE MERCOID CORPORATION
4201 BELMONT AVE., CHICAGO 41, ILLINOIS, U.S.A.

If you write maker identify as **IEN - 8339**

TRUCK . . Shelf type hand unit to pick orders from stock shelves

Source: NUTTING TRUCK & CASTER CO.
1201 W. Division St., Dept. IEN, Faribault, Minn.

Shelves are flanged

Figure 944-Z is a new hand operated shelf type truck equipped with swivel casters at its four corners and with two center wheels mounted on a cam type axle. A foot operated lever brings the center wheels down into contact with the floor or raises them to clear the floor so the load is taken by the corner casters.

The casters permit maneuvering the truck quickly into a confined location. Bringing the center wheels down into contact with the floor makes the truck easier to turn around sharp corners and to steer for long distance travel. The wheels are rubber tired steel ball bearing design. The unit illustrated measures 42 by 21 by 36 inches. It is fitted with three 18⅝ by 41⅜-in. shelves.

If you write maker identify as **IEN - 8340**

CASTINGS . . Work hardening alloy is cast to specified shapes and sizes

Source: CALUMET STEEL CASTINGS CORP.
1636 Summer St., Dept. IEN, Hammond, Ind.

Cast to your order

Illustrated are three examples of castings made of ZeVeScal work hardening chromium-iron alloy. Tests show surface hardness to 700 Brinell on the wear surface. The castings are sufficiently tough so they can be employed as paddles in pug mills and gravel mixers. The structure consists of carbides of chromium, molybdenum and iron in an austentic matrix.

If you write maker identify as **IEN - 8341**

COOLING . . Drinking fountain employs ice as the cooling medium

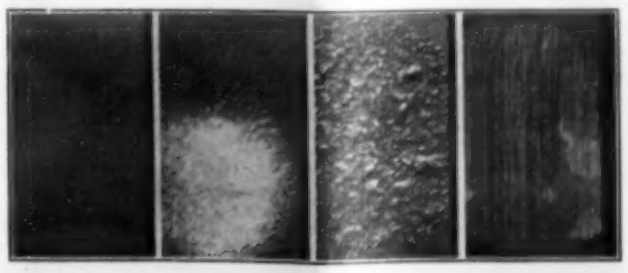
Source: ALLEN FILTER CO.
25 S. St. Clair St., Dept. IEN, Toledo 4, Ohio

Sanitary head

Two sizes are included in a new line of water coolers in which ice is used as the cooling medium. One size takes 100 lb. and lists at $73.70. The other takes 50 lb. and lists at $63.80. The inlet to the cooling coil connects to a plant water line. The steel housing is finished in brown or gray synthetic baked enamel.

If you write maker identify as **IEN - 8342**

New paint remover, for application by pressure spray, will loosen enamel so it comes off clean within ten minutes after



spraying. It has been developed by E. I. du Pont de Nemours & Co., 2518 Nemours Bldg., Dept. IEN, Wilmington 98, Del. The company's Kinetic Chemicals Division is offering the formula free to interested concerns that desire to prepare the remover and package it in Aerosol containers. Action is indicated in the illustration which shows, to the left, a section of a wood file box brush coated with gray machinery enamel. Next to the right is new application of the spray material. It has caused the enamel to start blistering. Three minutes later the enamel has blistered to a considerable extent and within ten minutes after spraying a putty knife was employed to remove the loosened material.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8343**

Roll a NEW Floor OVER the old with

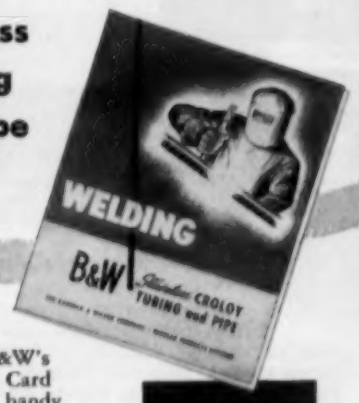
Redi-Roll
Factory Prepared, Heavy Duty Plastic Resurfacer
•
NO WAITING!
Let Heaviest Traffic Roll Over It Immediately!

Abolish downtime due to floor failures. Just roll *Redi-Roll* over the old floor to a compacted ¼" thickness and USE AT ONCE. It's spark-proof! It's tough! It's industry's best floor buy. Write for details now . . . today!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 5

If you write maker identify as **IEN - 8344**

WHEN YOU'RE WELDING Stainless Tubing and Pipe



. . . you'll find B&W's Technical Data Card on the subject a handy guide. It describes the various methods of welding, gives the welding characteristics of B&W Stainless Croloys and charts the recommended Arc Welding Procedures.

Send for it—it's a big help. TDC-162.

TA-4063 (LP)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as **IEN - 8345**

SEL-LOK SPRING PINS *won't vibrate loose*

Use them as hinge pins, use them to fasten gears, pulleys and sheaves to steel shafting, use them to replace keys, keyways and cotter pins—they won't work loose. For complete information, write STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

Sel-lok spring pins are shock resistant and vibration proof • eliminate expensive reaming operations • replace tapered or grooved pins • easy to insert and remove • reusable • accurate in diameter and length • reduce installation costs • lighter in weight and as strong as a solid cold-rolled steel pin of the same diameter • available in a full range of lengths and diameters

SEL-LOK SPRING PIN DIVISION **SPS**
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 8346

Make Test on Trial Offer

It's New! Tough!

INSTANT SETTING FLOOR PATCH

Repair broken factory floors without the usual traffic tie-up. Simply shovel INSTANT-USE into the hole or rut—tamp smooth—truck over! No waiting! INSTANT-USE bonds tight to old concrete—right up to a feather edge. It's tough. Wears like iron. Won't crack or crumble. Install complete overlay where floors are badly chewed up. Used indoors or out. Immediate shipment.

GET FREE HANDBOOK AND TRIAL OFFER!

INSTANT-USE

FLEXROCK COMPANY (Offices in principal cities)
2606-Z Filbert St., Philadelphia 1, Pa.

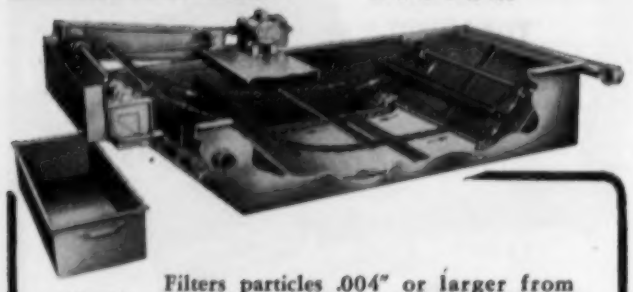
Please send me complete INSTANT-USE information, details of TRIAL ORDER PLAN and HAND BOOK OF BUILDING MAINTENANCE—no obligation. (Clip and attached Coupon to Co. letterhead.)

Name..... Title.....
Company.....
Address.....

If you write maker identify as IEN - 8347

New! Filters Small Solids...

Delpark Settling and Filter SYSTEM



Filters particles .004" or larger from liquids of varying viscosity containing solids of different particle sizes and weights.

Power-driven expeller flights, solid and of special bristle brushes, sweep solids from the screen and settling area up a ramp at the opposite end. A special cleaning device removes the solids from the flights before their return to the filter. Screens easily removed for manual cleaning. A blank metal sheet replaces the screen during cleaning.

WRITE FOR NEW BULLETIN

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVE. LEBANON, INDIANA

JULY 1954

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PLEASE WATCH FOR YOURS

Certain copies of this publication for the next few months will carry a post card on the front page. It is intended for your use to make sure you still want to remain on our mailing list. Please watch for the one with your name on it.

OK or correct your name and address as they appear on the card. Please also check the questions asked. They are simple, self-explanatory, essential to our circulation audit.

If you write maker identify as IEN - 8348

worth looking into...

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As a practical help to manufacturers who want to reduce cost, save space, and improve product appearance, Tuthill now offers Catalog No. 106 on Stripped Pumps for built-in applications.

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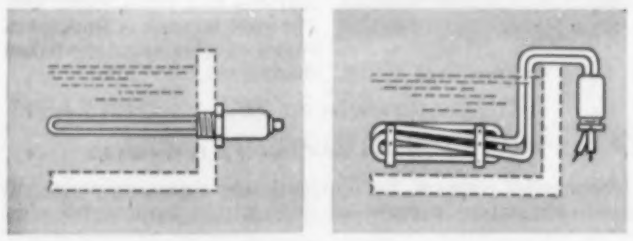

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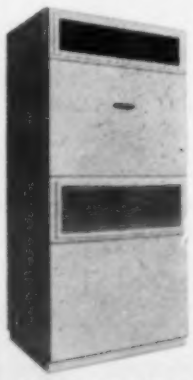

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REDUCES PARTS REJECTION
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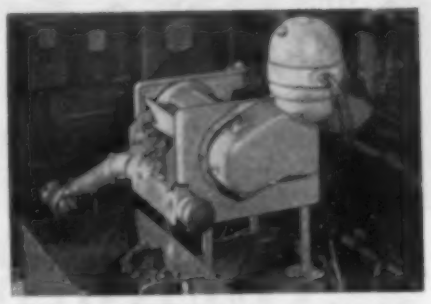

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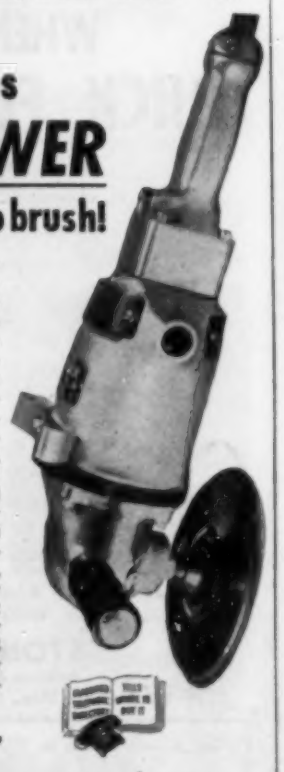

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I WISH I HAD...

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It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ENGINEER . . "I wish I had contact with an organization that can use my 15 years of industrial experience including estimating, purchasing, designing and drafting, particularly on material handling equipment, sales engineering, production management and cost work. I would like to locate in the Western United States, but I am ready to go to any other place. I am at present in Detroit. My age is 37, I am married and have 3 children." **IEN W-71**

ENGINEER . . "I wish I had contact, preferably with a West Coast employer, desiring the services of a graduate mechanical engineer with 5 years of experience in product, design and development. I am registered professionally in the State of Iowa and am located there at present." **IEN W-72**

INSULATING . . "I wish I knew the source for a noise absorption device in the form of cube shaped acoustical bells with one side open." **IEN W-73**

MANUFACTURING . . "I wish we had a buyer or lessor for 50,000 sq. ft. of industrial buildings at Alexandria, Ind., on the Nickel Plate Railroad." **IEN W-74**

PLASTIC MOLDING . . "I wish we had a used automatic 2 oz. plastic injection press for production purposes. If you have one we would like to have a description of its age and condition and specifications. We are in Xenia, Ohio." **IEN W-75**

SURPLUS . . "I wish we had a buyer for a 'Ross & Son' vertical mixer with double blades, a paint grinder with steel rollers and a 10 hp. motor, a twin unit pigment mixer with vertical paddles and 8 portable steel tanks, each with 125 gal. capacity and three wheel mounting for use with the mixing equipment. All stored in Long Island City." **IEN W-76**

SURPLUS . . "I wish we had a buyer for all or a part of 500 ft. of 3¾-in. diameter Nittany mills free turning brass rod in 6-ft. lengths. The rod is in Redwood City, Calif." **IEN W-77**

SURPLUS . . "I wish we knew where we could purchase surplus monochromators. Would like specifications and prices of any available. We are located in Carlisle, Pa." **IEN W-78**

SURPLUS . . "I wish we had contact with a buyer for a part or all of a stock of 7,000 Tampico wheels 8 in. in diameter to fit a 1¼-in. arbor and 1,000 measuring 12 in. in diameter to fit a 1½-in. arbor. The wheels are in stock in Chicago." **IEN W-79**

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Division of American Machine and Metals, Inc.

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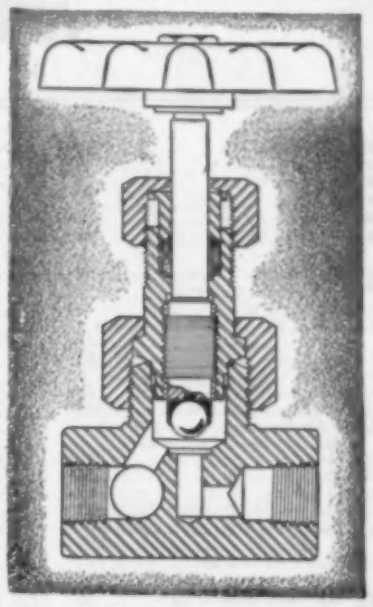
NEW! BALL VALVE for liquids, gas or steam



Here's a radically-new forged steel valve for general heavy industrial use. Can't leak . . . practically never wears out . . . costs little or no more than ordinary valves!

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FOXBORO INSTRUMENTATION

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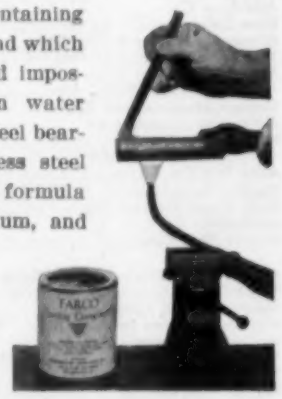
A PAID NEWS ADVERTISEMENT BY FARRELLOY CO.

TINS ALL METALS



Difficult tinning problems are being solved with a new powdered solder containing flux, called Farco Tinning Compound which permits jobs heretofore considered impossible, such as tinning cast iron water jackets and cylinder heads, cast steel bearings, pipes, cylinders and stainless steel equipment. The powerful chemical formula will lift the oxides from aluminum, and on other metals is more drastic than ordinary acids. Makes it possible to lift the scale and tin black iron in one operation. Stability of the new powder makes it possible to judge heat on large bearings by its action in turning liquid when proper temperature for tinning is reached. Although strong enough to remove scale, dirt, and tin rusty surfaces thoroughly, it is completely stable and will not liquefy in can. When used on gasoline motors, Diesel and marine engine bearings it is reported to increase performance life 100%. The compound may be applied with either torch or soldering iron depending on thickness of metal, and any good grade or solder may be used. Packaged in 1½ lb. cans, price $3.00 f.o.b. **Advt.**

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INSTALL COMPLETE 20c per square foot.

PERMAFLEX PRODUCTS COMPANY

1846 NORTH FRONT STREET, PHILA. 22, PA.